**OM-1581** 137 532S
June 2004

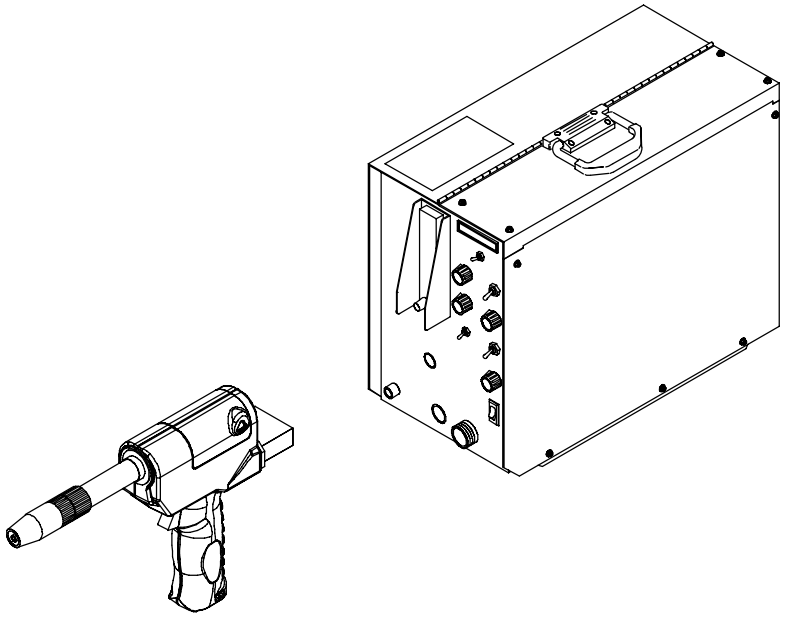
**Processes**

MIG (GMAW) Welding

**Description**

Wire Feeder And Feeder Gun

# XR™ A And XR™ W



# OWNER'S MANUAL

Visit our website at
**www.MillerWelds.com**

# From Miller to You

*Thank you* and *congratulations* on choosing Miller. Now you can get the job done and get it done right. We know you don't have time to do it any other way.

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This Owner's Manual is designed to help you get the most out of your Miller products. Please take time to read the Safety precautions. They will help you protect yourself against potential hazards on the worksite. We've made installation and operation quick and easy. With Miller you can count on years of reliable service with proper maintenance. And if for some reason the unit needs repair, there's a Troubleshooting section that will help you figure out what the problem is. The parts list will then help you to decide the exact part you may need to fix the problem. Warranty and service information for your particular model are also provided.

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Working as hard as you do – every power source from Miller is backed by the most hassle-free warranty in the business.

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# TABLE OF CONTENTS


**SECTION 1 − SAFETY PRECAUTIONS - READ BEFORE USING . . . . . 1**
1-1. Symbol Usage . . . . . 1
1-2. Arc Welding Hazards . . . . . 1
1-3. Additional Symbols For Installation, Operation, And Maintenance . . . . . 3
1-4. California Proposition 65 Warnings . . . . . 3
1-5. Principal Safety Standards . . . . . 4
1-6. EMF Information . . . . . 4
**SECTION 2 − CONSIGNES DE SÉCURITÉ − À LIRE AVANT UTILISATION . . . . . 5**
2-1. Signification des symboles . . . . . 5
2-2. Dangers relatifs au soudage à l'arc . . . . . 5
2-3. Autres symboles relatifs à l'installation, au fonctionnement et à l'entretien de l'appareil. . . . . 7
2-4. Principales normes de sécurité . . . . . 8
2-5. Information sur les champs électromagnétiques . . . . . 8
**SECTION 3 − SPECIFICATIONS . . . . . 9**
3-1. Wire Feeder Specifications . . . . . 9
3-2. Gun Specifications . . . . . 9
3-3. Duty Cycle And Overheating . . . . . 9
**SECTION 4 − INSTALLATION . . . . . 10**
4-1. Connections With A CC, CV Or CC/CV Voltage Welding Power Source Having A 14-Socket Receptacle . . . . . 10
4-2. Connections With A CV Welding Power Source Having Separate 115 VAC And Contactor Control Receptacles . . . . . 11
4-3. Connections With A CC Welding Power Source Having A Contactor Control Receptacle . . . . . 11
4-4. Connections With A CC Welding Power Source And A 115 VAC/12 VDC Secondary Contactor . . . . 12
4-5. Removing Top Cover Of Pistol Grip Gun . . . . . 12
4-6. Air-Cooled Gun Connections . . . . . 13
4-7. Water-Cooled Gun Connections . . . . . 14
4-8. Air-Cooled Feeder Connections . . . . . 15
4-9. Water-Cooled Feeder Connections . . . . . 16
4-10. Adjusting FasTip Position . . . . . 17
4-11. Voltage Sensing Lead Connections . . . . . 17
4-12. 115 VAC/Contactor Control Plug Information . . . . . 18
4-13. Replacing 115 VAC/Contactor Control Plug With Customer-Supplied 5-Pin Or Twistlock Plug . . . . . 19
4-14. Installing Wire Spool . . . . . 20
4-15. Threading Welding Wire Through Feeder . . . . . 21
4-16. Threading Welding Wire Through Gun . . . . . 22
4-17. Coolant Guidelines . . . . . 22
4-18. Adjusting Wire Feed Starting Speed . . . . . 23

# TABLE OF CONTENTS


**SECTION 5 − OPERATION ..... 24**
5-1. Front Panel Controls Of Feeder (Air-Cooled Model Shown) ..... 24
5-2. Safety Equipment ..... 24
5-3. Work And Voltage Sensing Cable Clamps ..... 24
5-4. Run-In Speed Control ..... 25
5-5. Jog Switch ..... 25
5-6. Voltage/Wire Speed Switch And Meter (Optional) ..... 25
5-7. Spot Controls (Optional) ..... 26
5-8. Remote Voltage Control (Optional) ..... 26
5-9. Power Switch ..... 26
5-10. Flowmeter (Optional) ..... 27
5-11. Internal Controls ..... 27
5-12. Gun Controls ..... 28
5-13. Shielding Gas ..... 28
5-14. Coolant Supply For Water-Cooled Models Only ..... 28
5-15. Sequence Of Gas Metal Arc Welding (GMAW) − Continuous Or Spot ..... 28
**SECTION 6 − MAINTENANCE & TROUBLESHOOTING ..... 29**
6-1. Routine Maintenance ..... 29
6-2. Changing Or Cleaning Gun Drive Roll ..... 30
6-3. Changing Feeder Drive Roll And Wire Inlet Guide ..... 31
6-4. Replacing Or Cleaning Gun Drive Roll Bearing ..... 32
6-5. Replacing Or Cleaning Feeder Drive Roll Bearing ..... 32
6-6. Changing Gun Contact Tip ..... 33
6-7. Removing Diffuser In Air-Cooled Pistol-Grip Guns ..... 33
6-8. Replacing The Liner ..... 34
6-9. Removing Diffuser In Water-Cooled Pistol-Grip Guns ..... 35
6-10. Replacing Hub Assembly ..... 35
6-11. Adjusting Hub Tension ..... 36
6-12. Overload Protection ..... 36
6-13. Water Flow Switch (Optional For Water-Cooled Models) ..... 36
6-14. Troubleshooting ..... 37
**SECTION 7 − ELECTRICAL DIAGRAMS ..... 39**
**SECTION 8 − PARTS LIST ..... 42**
**OPTIONS AND ACCESSORIES**
**WARRANTY**

# SECTION 1 − SAFETY PRECAUTIONS - READ BEFORE USING

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## 1-1. Symbol Usage

Means Warning! Watch Out! There are possible hazards with this procedure! The possible hazards are shown in the adjoining symbols.

▲ **Marks a special safety message.**

☞ *Means "Note"; not safety related.*

This group of symbols means Warning! Watch Out! possible ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid the hazards.

## 1-2. Arc Welding Hazards

▲ **The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Safety Standards listed in Section 1-5. Read and follow all Safety Standards.**

▲ **Only qualified persons should install, operate, maintain, and repair this unit.**

▲ **During operation, keep everybody, especially children, away.**

### ELECTRIC SHOCK can kill.

Touching live electrical parts can cause fatal shocks or severe burns. The electrode and work circuit is electrically live whenever the output is on. The input power circuit and machine internal circuits are also live when power is on. In semiautomatic or automatic wire welding, the wire, wire reel, drive roll housing, and all metal parts touching the welding wire are electrically live. Incorrectly installed or improperly grounded equipment is a hazard.

- Do not touch live electrical parts.
- Wear dry, hole-free insulating gloves and body protection.
- Insulate yourself from work and ground using dry insulating mats or covers big enough to prevent any physical contact with the work or ground.
- Do not use AC output in damp areas, if movement is confined, or if there is a danger of falling.
- Use AC output ONLY if required for the welding process.
- If AC output is required, use remote output control if present on unit.
- Disconnect input power or stop engine before installing or servicing this equipment. Lockout/tagout input power according to OSHA 29 CFR 1910.147 (see Safety Standards).
- Properly install and ground this equipment according to its Owner's Manual and national, state, and local codes.
- Always verify the supply ground − check and be sure that input power cord ground wire is properly connected to ground terminal in disconnect box or that cord plug is connected to a properly grounded receptacle outlet.
- When making input connections, attach proper grounding conductor first − double-check connections.
- Frequently inspect input power cord for damage or bare wiring − replace cord immediately if damaged − bare wiring can kill.
- Turn off all equipment when not in use.
- Do not use worn, damaged, undersized, or poorly spliced cables.
- Do not drape cables over your body.
- If earth grounding of the workpiece is required, ground it directly with a separate cable.
- Do not touch electrode if you are in contact with the work, ground, or another electrode from a different machine.
- Use only well-maintained equipment. Repair or replace damaged parts at once. Maintain unit according to manual.
- Wear a safety harness if working above floor level.
- Keep all panels and covers securely in place.
- Clamp work cable with good metal-to-metal contact to workpiece or worktable as near the weld as practical.
- Insulate work clamp when not connected to workpiece to prevent contact with any metal object.
- Do not connect more than one electrode or work cable to any single weld output terminal.

### SIGNIFICANT DC VOLTAGE exists after removal of input power on inverters.

- Turn Off inverter, disconnect input power, and discharge input capacitors according to instructions in Maintenance Section before touching any parts.

### FUMES AND GASES can be hazardous.

Welding produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes. Do not breathe the fumes.
- If inside, ventilate the area and/or use exhaust at the arc to remove welding fumes and gases.
- If ventilation is poor, use an approved air-supplied respirator.
- Read the Material Safety Data Sheets (MSDSs) and the manufacturer's instructions for metals, consumables, coatings, cleaners, and degreasers.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watch-person nearby. Welding fumes and gases can displace air and lower the oxygen level causing injury or death. Be sure the breathing air is safe.
- Do not weld in locations near degreasing, cleaning, or spraying operations. The heat and rays of the arc can react with vapors to form highly toxic and irritating gases.
- Do not weld on coated metals, such as galvanized, lead, or cadmium plated steel, unless the coating is removed from the weld area, the area is well ventilated, and if necessary, while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded.

## ARC RAYS can burn eyes and skin.

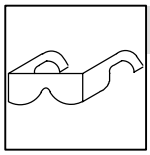
Arc rays from the welding process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear a welding helmet fitted with a proper shade of filter to protect your face and eyes when welding or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear approved safety glasses with side shields under your helmet.
- Use protective screens or barriers to protect others from flash and glare; warn others not to watch the arc.
- Wear protective clothing made from durable, flame-resistant material (leather and wool) and foot protection.

## WELDING can cause fire or explosion.

Welding on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding arc. The flying sparks, hot workpiece, and hot equipment can cause fires and burns. Accidental contact of electrode to metal objects can cause sparks, explosion, overheating, or fire. Check and be sure the area is safe before doing any welding.

- Protect yourself and others from flying sparks and hot metal.
- Do not weld where flying sparks can strike flammable material.
- Remove all flammables within 35 ft (10.7 m) of the welding arc. If this is not possible, tightly cover them with approved covers.
- Be alert that welding sparks and hot materials from welding can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not weld on closed containers such as tanks, drums, or pipes, unless they are properly prepared according to AWS F4.1 (see Safety Standards).
- Connect work cable to the work as close to the welding area as practical to prevent welding current from traveling long, possibly unknown paths and causing electric shock and fire hazards.
- Do not use welder to thaw frozen pipes.
- Remove stick electrode from holder or cut off welding wire at contact tip when not in use.
- Wear oil-free protective garments such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
- Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding.



## FLYING METAL can injure eyes.

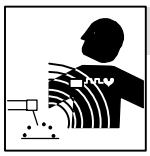
- Welding, chipping, wire brushing, and grinding cause sparks and flying metal. As welds cool, they can throw off slag.
- Wear approved safety glasses with side shields even under your welding helmet.

## BUILDUP OF GAS can injure or kill.

- Shut off shielding gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.

## HOT PARTS can cause severe burns.

- Do not touch hot parts bare handed.
- Allow cooling period before working on gun or torch.



## MAGNETIC FIELDS can affect pacemakers.

- Pacemaker wearers keep away.
- Wearers should consult their doctor before going near arc welding, gouging, or spot welding operations.

## NOISE can damage hearing.

Noise from some processes or equipment can damage hearing.

- Wear approved ear protection if noise level is high.

## CYLINDERS can explode if damaged.

Shielding gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, slag, open flames, sparks, and arcs.
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping.
- Keep cylinders away from any welding or other electrical circuits.
- Never drape a welding torch over a gas cylinder.
- Never allow a welding electrode to touch any cylinder.
- Never weld on a pressurized cylinder − explosion will result.
- Use only correct shielding gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition.
- Turn face away from valve outlet when opening cylinder valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Read and follow instructions on compressed gas cylinders, associated equipment, and CGA publication P-1 listed in Safety Standards.

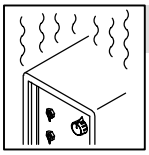
## 1-3. Additional Symbols For Installation, Operation, And Maintenance

### FIRE OR EXPLOSION hazard.

- Do not install or place unit on, over, or near combustible surfaces.
- Do not install unit near flammables.
- Do not overload building wiring − be sure power supply system is properly sized, rated, and protected to handle this unit.

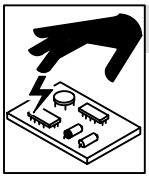
### FALLING UNIT can cause injury.

- Use lifting eye to lift unit only, NOT running gear, gas cylinders, or any other accessories.
- Use equipment of adequate capacity to lift and support unit.
- If using lift forks to move unit, be sure forks are long enough to extend beyond opposite side of unit.



### OVERUSE can cause OVERHEATING

- Allow cooling period; follow rated duty cycle.
- Reduce current or reduce duty cycle before starting to weld again.
- Do not block or filter airflow to unit.



### STATIC (ESD) can damage PC boards.

- Put on grounded wrist strap BEFORE handling boards or parts.
- Use proper static-proof bags and boxes to store, move, or ship PC boards.

### MOVING PARTS can cause injury.

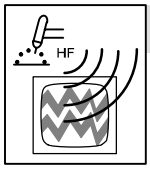
- Keep away from moving parts.
- Keep away from pinch points such as drive rolls.

### WELDING WIRE can cause injury.

- Do not press gun trigger until instructed to do so.
- Do not point gun toward any part of the body, other people, or any metal when threading welding wire.

### MOVING PARTS can cause injury.

- Keep away from moving parts such as fans.
- Keep all doors, panels, covers, and guards closed and securely in place.




### H.F. RADIATION can cause interference.

- High-frequency (H.F.) can interfere with radio navigation, safety services, computers, and communications equipment.
- Have only qualified persons familiar with electronic equipment perform this installation.
- The user is responsible for having a qualified electrician promptly correct any interference problem resulting from the installation.
- If notified by the FCC about interference, stop using the equipment at once.
- Have the installation regularly checked and maintained.
- Keep high-frequency source doors and panels tightly shut, keep spark gaps at correct setting, and use grounding and shielding to minimize the possibility of interference.

### ARC WELDING can cause interference.

- Electromagnetic energy can interfere with sensitive electronic equipment such as computers and computer-driven equipment such as robots.
- Be sure all equipment in the welding area is electromagnetically compatible.
- To reduce possible interference, keep weld cables as short as possible, close together, and down low, such as on the floor.
- Locate welding operation 100 meters from any sensitive electronic equipment.
- Be sure this welding machine is installed and grounded according to this manual.
- If interference still occurs, the user must take extra measures such as moving the welding machine, using shielded cables, using line filters, or shielding the work area.

## 1-4. California Proposition 65 Warnings

▲ **Welding or cutting equipment produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code Section 25249.5 et seq.)**

▲ **Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.**

**For Gasoline Engines:**

▲ **Engine exhaust contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.**

**For Diesel Engines:**

▲ **Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.**

## 1-5. Principal Safety Standards

*Safety in Welding, Cutting, and Allied Processes,* ANSI Standard Z49.1, from American Welding Society, 550 N.W. LeJeune Rd, Miami FL 33126 (phone: 305-443-9353, website: www.aws.org).

*Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping*, American Welding Society Standard AWS F4.1, from American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126 (phone: 305-443-9353, website: www.aws.org).

*National Electrical Code*, NFPA Standard 70, from National Fire Protection Association, P.O. Box 9101, 1 Battery March Park, Quincy, MA 02269−9101(phone: 617−770−3000, website: www.nfpa.org and www.sparky.org).

*Safe Handling of Compressed Gases in Cylinders*, CGA Pamphlet P-1, from Compressed Gas Association, 1735 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202−4102 (phone: 703−412−0900, website: www.cganet.com).

*Code for Safety in Welding and Cutting*, CSA Standard W117.2, from Canadian Standards Association, Standards Sales, 178 Rexdale Boulevard, Rexdale, Ontario, Canada M9W 1R3 (phone: 800−463−6727 or in Toronto 416−747−4044, website: www.csa−international.org).

*Practice For Occupational And Educational Eye And Face Protection,* ANSI Standard Z87.1, from American National Standards Institute, 11 West 42nd Street, New York, NY 10036−8002 (phone: 212−642−4900, website: www.ansi.org).

*Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*, NFPA Standard 51B, from National Fire Protection Association, P.O. Box 9101, 1 Battery March Park, Quincy, MA 02269−9101 (phone: 617−770−3000,website: www.nfpa.org and www. sparky.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, from U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250 (there are 10 Regional Offices−−phone for Region 5, Chicago, is 312−353−2220,website: www.osha.gov).

## 1-6. EMF Information

Considerations About Welding And The Effects Of Low Frequency Electric And Magnetic Fields

Welding current, as it flows through welding cables, will cause electromagnetic fields. There has been and still is some concern about such fields. However, after examining more than 500 studies spanning 17 years of research, a special blue ribbon committee of the National Research Council concluded that: “The body of evidence, in the committee's judgment, has not demonstrated that exposure to power-frequency electric and magnetic fields is a human-health hazard.” However, studies are still going forth and evidence continues to be examined. Until the final conclusions of the research are reached, you may wish to minimize your exposure to electromagnetic fields when welding or cutting.

To reduce magnetic fields in the workplace, use the following procedures:

1. Keep cables close together by twisting or taping them.
2. Arrange cables to one side and away from the operator.
3. Do not coil or drape cables around your body.
4. Keep welding power source and cables as far away from operator as practical.
5. Connect work clamp to workpiece as close to the weld as possible.

**About Pacemakers:**

Pacemaker wearers consult your doctor first. If cleared by your doctor, then following the above procedures is recommended.

# SECTION 2 − CONSIGNES DE SÉCURITÉ − À LIRE AVANT UTILISATION



## 2-1. Signification des symboles

Signifie « Mise en garde. Faire preuve de vigilance. » Cette procédure présente des risques identifiés par les symboles adjacents aux directives.

▲ **Identifie un message de sécurité particulier.**

☞ *Signifie « NOTA » ; n'est pas relatif à la sécurité.*

Ce groupe de symboles signifie « Mise en garde. Faire preuve de vigilance. » Il y a des dangers liés aux CHOCS ÉLECTRIQUES, aux PIÈCES EN MOUVEMENT et aux PIÈCES CHAUDES. Se reporter aux symboles et aux directives ci-dessous afin de connaître les mesures à prendre pour éviter tout danger.

## 2-2. Dangers relatifs au soudage à l'arc

▲ **Les symboles ci-après sont utilisés tout au long du présent manuel pour attirer l'attention sur les dangers potentiels et les identifier. Lorsqu'on voit un symbole, faire preuve de vigilance et suivre les directives mentionnées afin d'éviter tout danger. Les consignes de sécurité énoncées ci-après ne font que résumer le contenu des normes de sécurité mentionnées à la section 2-4. Lire et respecter toutes ces normes.**

▲ **L'installation, l'utilisation, l'entretien et les réparations ne doivent être confiés qu'à des personnes qualifiées.**

▲ **Pendant l'utilisation de l'appareil, tenir à l'écart toute personne, en particulier les enfants.**

### LES DÉCHARGES ÉLECTRIQUES peuvent être mortelles.

Un simple contact avec des pièces sous tension peut causer une électrocution ou des blessures graves. L'électrode et le circuit de soudage sont sous tension dès que l'appareil est en fonctionnement. Le circuit d'entrée et les circuits internes de l'appareil sont également sous tension. En soudage semi−automatique ou automatique, le fil, le dévidoir, le logement des galets d'entraînement et les pièces métalliques en contact avec le fil de soudage sont sous tension. Tout matériel mal installé ou mal mis à la terre présente un danger.

- Ne jamais toucher aux pièces électriques sous tension.
- Porter des gants et des vêtements de protection secs et exempts de trous.
- S'isoler de la pièce et de la terre au moyen de tapis ou autres dispositifs isolants suffisamment grands pour empêcher tout contact physique avec la pièce ou la terre.
- Ne pas se servir d'une source de courant alternatif dans les zones humides, les endroits confinés ou là où on risque de tomber.
- Ne se servir d'une source de courant alternatif QUE si le procédé de soudage l'exige.
- Si l'utilisation d'une source de courant alternatif s'avère nécessaire, se servir de la fonction de télécommande si l'appareil en est équipé.
- Couper l'alimentation ou arrêter le moteur avant de procéder à l'installation, à la réparation ou à l'entretien de l'appareil. Couper/étiqueter l'alimentation selon la norme OSHA 29 CFR 1910.147 (voir les normes de sécurité).
- Installer et mettre à la terre correctement l'appareil conformément à son manuel d'utilisation et aux codes nationaux, provinciaux et municipaux.
- Toujours vérifier la terre du cordon d'alimentation − Vérifier et s'assurer que le fil de terre du cordon d'alimentation est bien raccordé à la borne de terre du sectionneur ou que la fiche du cordon est raccordée à une prise correctement mise à la terre.
- Pour exécuter les branchements d'entrée, fixer d'abord le conducteur de mise à la terre adéquat et contre−vérifier les connexions.
- Vérifier fréquemment le cordon d'alimentation et s'assurer qu'il n'est ni endommagé ni dénudé ; le remplacer immédiatement s'il est endommagé − tout câble dénudé peut causer une électrocution.
- Mettre l'appareil hors tension quand on ne l'utilise pas.
- Ne pas utiliser de câbles usés, endommagés, de calibre insuffisant ou mal épissés.
- Ne pas s'enrouler les câbles autour du corps.
- Si la pièce soudée doit être mise à la terre, le faire directement avec un câble distinct.
- Ne pas toucher l'électrode quand on est en contact avec la pièce, la terre ou une électrode d'une autre machine.
- N'utiliser que du matériel en bon état. Réparer ou remplacer sur−le−champ les pièces endommagées. Entretenir l'appareil conformément au présent manuel.
- Porter un harnais de sécurité quand on travaille en hauteur.
- Maintenir solidement en place tous les panneaux et capots.
- Fixer le câble de retour de façon à obtenir un bon contact métal sur métal avec la pièce à souder ou la table de travail, le plus près possible de la soudure.
- Ne pas connecter plus d'une électrode ou plus d'un câble de masse à un même terminal de sortie.

### Il subsiste un COURANT CONTINU IMPORTANT dans les convertisseurs après la suppression de l'alimentation électrique.

- Arrêter les convertisseurs, débrancher le courant électrique et décharger les condensateurs d'alimentation selon les instructions énoncées à la section Entretien avant de toucher les pièces.

### LES FUMÉES ET LES GAZ peuvent être dangereux.

Le soudage génère des fumées et des gaz dont l'inhalation peut être dangereuse pour la santé.

- Se tenir à distance des fumées et ne pas les inhaler.
- À l'intérieur, ventiler la zone et/ou utiliser un dispositif d'aspiration au niveau de l'arc pour l'évacuation des fumées et des gaz de soudage.
- Si la ventilation est insuffisante, utiliser un respirateur à adduction d'air agréé.
- Lire les fiches techniques de santé−sécurité (FTSS) et les instructions du fabricant concernant les métaux, les consommables, les revêtements, les nettoyants et les dégraisseurs.
- Ne travailler dans un espace clos que s'il est bien ventilé ou porter un respirateur à adduction d'air. Demander toujours à un surveillant dûment formé de se tenir à proximité. Des fumées et des gaz de soudage peuvent se substituer à l'air, abaisser la teneur en oxygène et causer des lésions ou des accidents mortels. S'assurer que l'air est respirable.
- Ne pas souder à proximité d'opérations de dégraissage, de nettoyage ou de pulvérisation. La chaleur et les rayons de l'arc peuvent réagir en présence de vapeurs et former des gaz hautement toxiques et irritants.
- Ne pas souder de métaux munis d'un revêtement, tels que la tôle d'acier galvanisée, plombée ou cadmiée, à moins que le revêtement n'ait été enlevé dans la zone de soudage, que l'endroit soit bien ventilé, et si nécessaire, porter un respirateur à adduction d'air. Les revêtements et tous les métaux renfermant ces éléments peuvent dégager des fumées toxiques lorsqu'on les soude.

## LES RAYONS DE L'ARC peuvent causer des brûlures oculaires et cutanées.

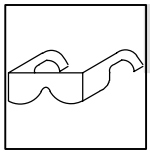
Le rayonnement de l'arc génère des rayons visibles et invisibles intenses (ultraviolets et infrarouges) susceptibles de causer des brûlures oculaires et cutanées. Des étincelles sont projetées pendant le soudage.

- Porter un masque de soudage muni d'un filtre de la nuance adéquate pour se protéger le visage et les yeux pendant le soudage ou pour regarder (voir les normes de sécurité ANSI Z49.1 et Z87.1).
- Porter des lunettes de sécurité à écrans latéraux sous le masque.
- Utiliser des écrans ou des barrières pour protéger les tiers de l'éclat éblouissant ou aveuglant de l'arc ; leur demander de ne pas regarder l'arc.
- Porter des vêtements de protection en matière durable et ignifuge (cuir ou laine) et des chaussures de sécurité.

## LE SOUDAGE peut causer un incendie ou une explosion.

Le soudage effectué sur des récipients fermés tels que des réservoirs, des fûts ou des conduites peut causer leur éclatement. Des étincelles peuvent être projetées de l'arc de soudure. La projection d'étincelles, les pièces chaudes et les équipements chauds peuvent causer des incendies et des brûlures. Le contact accidentel de l'électrode avec tout objet métallique peut causer des étincelles, une explosion, un surchauffement ou un incendie. Avant de commencer le soudage, vérifier et s'assurer que l'endroit ne présente pas de danger.

- Se protéger et protéger les tiers de la projection d'étincelles et de métal chaud.
- Ne pas souder à un endroit où des étincelles peuvent tomber sur des substances inflammables.
- Placer toutes les substances inflammables à une distance de 10,7 m de l'arc de soudage. En cas d'impossibilité, les recouvrir soigneusement avec des protections agréées.
- Des étincelles et des matières en fusion peuvent facilement passer même par des fissures et des ouvertures de petites dimensions.
- Surveiller tout déclenchement d'incendie et tenir un extincteur à proximité.
- Le soudage effectué sur un plafond, un plancher, une paroi ou une cloison peut déclencher un incendie de l'autre côté.
- Ne pas souder des récipients fermés tels que des réservoirs, des fûts ou des conduites, à moins qu'ils n'aient été préparés conformément à l'AWS F4.1 (voir les normes de sécurité).
- Brancher le câble sur la pièce le plus près possible de la zone de soudage pour éviter que le courant ne circule sur une longue distance, par des chemins inconnus, et ne cause des risques d'électrocution et d'incendie.
- Ne pas utiliser le poste de soudage pour dégeler des conduites gelées.
- En cas de non utilisation, enlever la baguette d'électrode du porte−électrode ou couper le fil au raz du tube−contact.
- Porter des vêtements de protection exempts d'huile tels que des gants en cuir, une chemise en tissu épais, des pantalons sans revers, des chaussures montantes et un masque.
- Avant de souder, retirer tout produit combustible de ses poches, tel qu'un briquet au butane ou des allumettes.



## LES PARTICULES PROJETÉES peuvent blesser les yeux.

- Le soudage, le burinage, le passage de la pièce à la brosse métallique et le meulage provoquent l'émission d'étincelles et de particules métalliques. Pendant leur refroidissement, les soudures risquent de projeter du laitier.
- Porter des lunettes de sécurité à écrans latéraux agréés, même sous le masque de soudage.

## LES ACCUMULATIONS DE GAZ peuvent causer des blessures ou même la mort.

- Couper l'alimentation en gaz protecteur en cas de non utilisation.
- Veiller toujours à bien ventiler les espaces confinés ou porter un respirateur à adduction d'air agréé.

## LES PIÈCES CHAUDES peuvent causer des brûlures graves.

- Ne pas toucher les pièces chaudes à main nue.
- Prévoir une période de refroidissement avant d'utiliser le pistolet ou la torche.

## LES CHAMPS MAGNÉTIQUES peuvent perturber le fonctionnement des stimulateurs cardiaques.

- Les personnes qui portent un stimulateur cardiaque doivent se tenir à distance.
- Ils doivent consulter leur médecin avant de s'approcher d'un lieu où on exécute des opérations de soudage à l'arc, de gougeage ou de soudage par points.

## LE BRUIT peut affecter l'ouïe.

Le bruit de certains processus et équipements peut affecter l'ouïe.

- Porter des protecteurs d'oreille agréés si le niveau sonore est trop élevé.

## Les BOUTEILLES endommagées peuvent exploser.

Les bouteilles de gaz protecteur contiennent du gaz sous haute pression. Toute bouteille endommagée peut exploser. Comme les bouteilles de gaz font normalement partie du procédé de soudage, les manipuler avec précaution.

- Protéger les bouteilles de gaz comprimé de la chaleur excessive, des chocs mécaniques, du laitier, des flammes nues, des étincelles et des arcs.
- Placer les bouteilles debout en les fixant dans un support stationnaire ou dans un porte−bouteilles pour les empêcher de tomber ou de se renverser.
- Tenir les bouteilles éloignées des circuits de soudage ou autres circuits électriques.
- Ne jamais poser une torche de soudage sur une bouteille de gaz.
- Ne jamais mettre une électrode de soudage en contact avec une bouteille de gaz.
- Ne jamais souder une bouteille contenant du gaz sous pression − elle risquerait d'exploser.
- N'utiliser que les bouteilles de gaz protecteur, régulateurs, tuyaux et raccords adéquats pour l'application envisagée ; les maintenir en bon état, ainsi que les pièces connexes.
- Détourner la tête lorsqu'on ouvre la soupape d'une bouteille.
- Laisser le capuchon protecteur sur la soupape, sauf en cas d'utilisation ou de branchement de la bouteille
- Lire et suivre les instructions concernant les bouteilles de gaz comprimé, les équipements associés et les publications P−1 de la CGA, mentionnées dans les normes de sécurité.

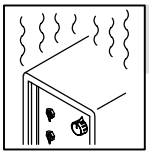
## 2-3. Autres symboles relatifs à l’installation, au fonctionnement et à l’entretien de l’appareil.

### Risque D’INCENDIE OU D’EXPLOSION

- Ne pas placer l’appareil sur une surface inflammable, ni au−dessus ou à proximité d’elle.
- Ne pas installer l’appareil à proximité de produits inflammables.
- Ne pas surcharger l’installation électrique − s’assurer que l’alimentation est correctement dimensionnée et protégée avant de mettre l’appareil en service.

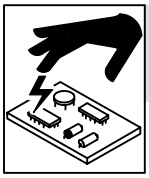
### LA CHUTE DE L’APPAREIL peut blesser.

- N’utiliser que l’anneau de levage pour lever l’appareil. NE PAS utiliser le chariot, les bouteilles de gaz ou tout autre accessoire.
- Utiliser un engin de capacité adéquate pour lever l’appareil.
- Si on utilise un chariot élévateur pour déplacer l’unité, s’assurer que les fourches sont suffisamment longues pour dépasser du côté opposé de l’appareil.



### L’EMPLOI EXCESSIF peut FAIRE SURCHAUFFER L’ÉQUIPEMENT.

- Prévoir une période de refroidissement ; respecter le cycle opératoire nominal.
- Réduire le courant ou le cycle opératoire avant de reprendre le soudage.
- Ne pas obstruer les orifices ou filtrer l’alimentation en air du poste.



### LES CHARGES ÉLECTROSTATIQUES peuvent endommager les circuits imprimés.

- Mettre un bracelet antistatique AVANT de manipuler des cartes ou des pièces.
- Utiliser des pochettes et des boîtes antistatiques pour stocker, déplacer ou expédier des cartes de circuits imprimés.

### LES PIÈCES MOBILES peuvent causer des blessures.

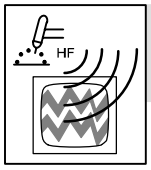
- Se tenir à l’écart des pièces mobiles.
- Se tenir à l’écart des points de coincement tels que les dévidoirs.

### LES FILS DE SOUDAGE peuvent causer des blessures.

- Ne pas appuyer sur la gâchette avant d’en avoir reçu l’instruction.
- Ne pas diriger le pistolet vers soi, vers d’autres personnes ou vers toute pièce mécanique en engageant le fil de soudage.

### LES ORGANES MOBILES peuvent causer des blessures.

- Se tenir à l’écart des organes mobiles comme les ventilateurs.
- Maintenir fermés et bien fixés les portes, panneaux, recouvrements et dispositifs de protection.

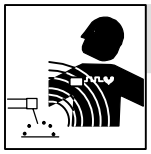



### LE RAYONNEMENT HAUTE FRÉQUENCE (H. F.) risque de causer des interférences.

- Le rayonnement haute fréquence peut causer des interférences avec les équipements de radionavigation et de communication, les services de sécurité et les ordinateurs.
- Ne demander qu’à des personnes qualifiées familiarisées avec les équipements électroniques de faire fonctionner l’installation.
- L’utilisateur est tenu de faire corriger rapidement par un électricien qualifié les interférences causées par l’installation.
- Si la Federal Communications Commission signale des interférences, arrêter immédiatement l’appareil.
- Faire régulièrement contrôler et entretenir l’installation.
- Maintenir soigneusement fermés les panneaux et les portes des sources de haute fréquence, maintenir le jeu d’éclatement au réglage adéquat et utiliser une terre et un blindage pour réduire les interférences éventuelles.

### LE SOUDAGE À L’ARC peut causer des interférences.

- L’énergie électromagnétique peut causer des interférences avec l’équipement électronique sensible tel que les ordinateurs et l’équipement commandé par ordinateur tel que les robots.
- Veiller à ce que tout l’équipement de la zone de soudage soit compatible au point de vue électromagnétique.
- Pour réduire la possibilité d’interférence, maintenir les câbles de soudage aussi courts que possible, les grouper, et les poser aussi bas que possible (par ex. : à terre).
- Veiller à souder à une distance de 100 mètres de tout équipement électronique sensible.
- Veiller à ce que le poste de soudage soit posé et mis à la terre conformément au présent manuel.
- En cas d’interférences après exécution des directives précédentes, il incombe à l’utilisateur de prendre des mesures supplémentaires telles que le déplacement du poste, l’utilisation de câbles blindés, l’utilisation de filtres de ligne ou la pose de protecteurs dans la zone de travail.



### LES CHAMPS MAGNÉTIQUES peuvent affecter les stimulateurs cardiaques.

- Porteurs de stimulateur cardiaque, restez à distance.
- Les porteurs d’un stimulateur cardiaque doivent d’abord consulter leur médecin avant de s’approcher des opérations de soudage à l’arc, de gougeage ou de soudage par points.

## 2-4. Principales normes de sécurité

Safety in Welding, Cutting, and Allied Processes, norme ANSI Z49.1, de l'American Welding Society, 550 N.W. LeJeune Rd, Miami FL 33126 (téléphone : (305) 443−9353, site Web : www.aws.org).

Recommended Safe Practices for the Preparation for Welding and Cutting of Containers and Piping, norme American Welding Society AWS F4.1, de l'American Welding Society, 550 N.W. LeJeune Rd, Miami, FL 33126 (téléphone : (305) 443−9353, site Web : www.aws.org).

National Electrical Code, norme NFPA 70, de la National Fire Protection Association, P.O. Box 9101, 1 Battery March Park, Quincy, MA 02269−9101 (téléphone : (617) 770−3000, sites Web : www.nfpa.org et www.sparky.org).

Safe Handling of Compressed Gases in Cylinders, brochure CGA P−1, de la Compressed Gas Association, 1735 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202−4102 (téléphone : (703) 412−0900, site Web : www.cganet.com).

Code for Safety in Welding and Cutting, norme CSA W117.2, de la Canadian Standards Association, Standards Sales, 178 boulevard Rexdale, Rexdale (Ontario) Canada M9W 1R3 (téléphone : (800) 463−6727 ou à Toronto : (416) 747−4044, site Web : www.csa−international.org).

Practice For Occupational And Educational Eye And Face Protection, norme ANSI Z87.1, de l'American National Standards Institute, 11 West 42nd Street, New York, NY 10036−8002 (téléphone : (212) 642−4900, site Web : www.ansi.org).

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, norme NFPA 51B, de la National Fire Protection Association, P.O. Box 9101, 1 Battery March Park, Quincy, MA 02269−9101 (téléphone : (617) 770−3000, site Web : www.nfpa.org et www.sparky.org).

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910, Subpart Q, and Part 1926, Subpart J, de l'U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250 (il y a 10 bureaux régionaux − Téléphone pour la Région 5, Chicago : (312) 353−2220, site Web : www.osha.gov).

## 2-5. Information sur les champs électromagnétiques

Données sur le soudage électrique et les effets des champs magnétiques basse fréquence sur l'organisme

En parcourant les câbles de soudage, le courant crée des champs électromagnétiques. Les effets potentiels de tels champs restent préoccupants. Cependant, après avoir examiné plus de 500 études qui ont été faites pendant une période de recherche de 17 ans, un comité de spécialistes du National Research Council a conclu : « L'accumulation de preuves n'a pas démontré que l'exposition aux champs magnétiques et aux champs électriques à haute fréquence constitue un risque pour la santé humaine ». Toutefois, les études et l'examen des preuves se poursuivent. En attendant les conclusions finales de la recherche, il serait souhaitable de réduire l'exposition aux champs électromagnétiques pendant le soudage ou le coupage.

Afin de réduire les champs électromagnétiques en milieu de travail, respecter les consignes suivantes :

1. Garder les câbles ensemble en les torsadant ou en les fixant avec du ruban adhésif.
2. Mettre tous les câbles du côté opposé à l'opérateur.
3. Ne pas s'enrouler les câbles autour du corps.
4. Garder le poste de soudage et les câbles le plus loin possible de soi.
5. Placer la pince de masse le plus près possible de la zone de soudage.

**Consignes relatives aux stimulateurs cardiaques :**

Les personnes qui portent un stimulateur cardiaque doivent avant tout consulter leur médecin. Si ce dernier les déclare aptes, il leur est recommandé de respecter les consignes ci-dessus.

# SECTION 3 − SPECIFICATIONS

## 3-1. Wire Feeder Specifications

| Specification | Description |
|---|---|
| Type Of Input Power | 115 Volts AC, 3 Amperes At 50/60 Or 100 Hz Power |
| Control Circuit Voltage Provided At Gun | 30 Volts DC |
| Wire Feed Speed Range | 70-875 ipm (1.9-22.2 mpm) |
| Overall Dimensions | Length: 19 in (483 mm); Width: 9-1/4 in (235 mm); Height: 15-1/4 in (387 mm) |
| Maximum Spool Capacity | 12 in (305 mm) |
| Cooling Method | Air-Cooled (A Models) Or Water-Cooled (W Models) |
| Weight (Feeder With Gun) | Models With 15 ft (4.6 m) Cable Assembly<br>Net: 56 lb (25 kg); Ship: 58 lb (26 kg)<br><br>Models With 30 ft (9.1 m) Cable Assembly<br>Net: 63 lb (29 kg); Ship: 65 lb (30 kg) |

## 3-2. Gun Specifications

| Specification | Description |
|---|---|
| Input Voltage | 30 Volts DC |
| Duty Cycle (Air-Cooled Models) | At 200 Amperes, 100% Using Argon Or Argon Mixture Shielding Gas<br>At 250 Amperes, 60% Using Argon Or Argon Mixture Shielding Gas (See Section 3-3) |
| Duty Cycle (Water-Cooled Models) | At 400 Amperes, 100% Using Argon Or Argon Mixture Shielding Gas (See Section 3-3) |
| Wire Size Range | .030 Thru 1/16 in (0.8 Thru 1.6 mm) Aluminum Wire<br>.030 Thru .045 in (0.8 Thru 1.1 mm) Hard Or Cored Wire |

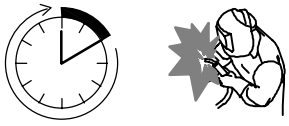
## 3-3. Duty Cycle And Overheating

Duty Cycle is percentage of 10 minutes that unit can weld at rated load without overheating.

▲ **Exceeding duty cycle can damage unit and void warranty.**

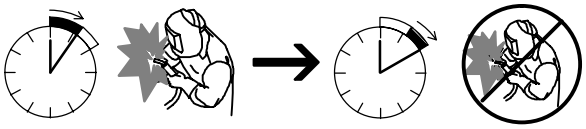
**Air-Cooled Models**

**100% Duty Cycle At 200 Amperes Using Argon**



Continuous Welding

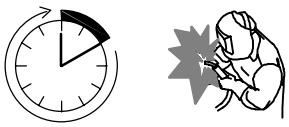
**60% Duty Cycle At 250 Amperes Using Argon**



6 Minutes Welding 4 Minutes Resting

**Water-Cooled Models**

**100% Duty Cycle At 400 Amperes Using Argon**



Continuous Welding

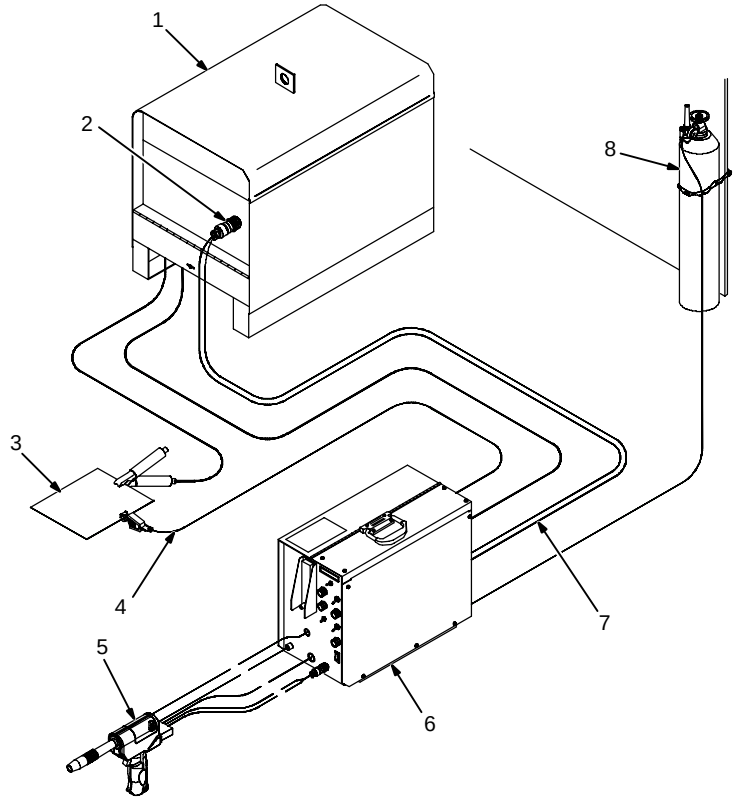
# SECTION 4 − INSTALLATION

| NOTE ☞ | *Be sure that contact tip, liner, and drive rolls are correct for wire size and type. See Section 5 to change parts as needed. See Section 7 for list of other available contact tips.* |
|---|---|

Review Section 4-1 through Section 4-4 to determine how equipment will be connected. Air-cooled models are shown in Section 4-1 through Section 4-4. For water-cooled models, supplied water hoses must be connected from wire feeder to coolant supply.

Read entire Section 4 before installing equipment.

## 4-1. Connections With A CC, CV Or CC/CV Voltage Welding Power Source Having A 14-Socket Receptacle




1 Constant Current (CC), Constant Voltage (CV) Or Constant Current/Constant Voltage (CC/CV) Welding Power Source

2 115 VAC/Contactor Control 14-Pin Plug

3 Workpiece

4 Voltage Sensing Lead

Connect lead to workpiece for CC welding only.

5 Gun

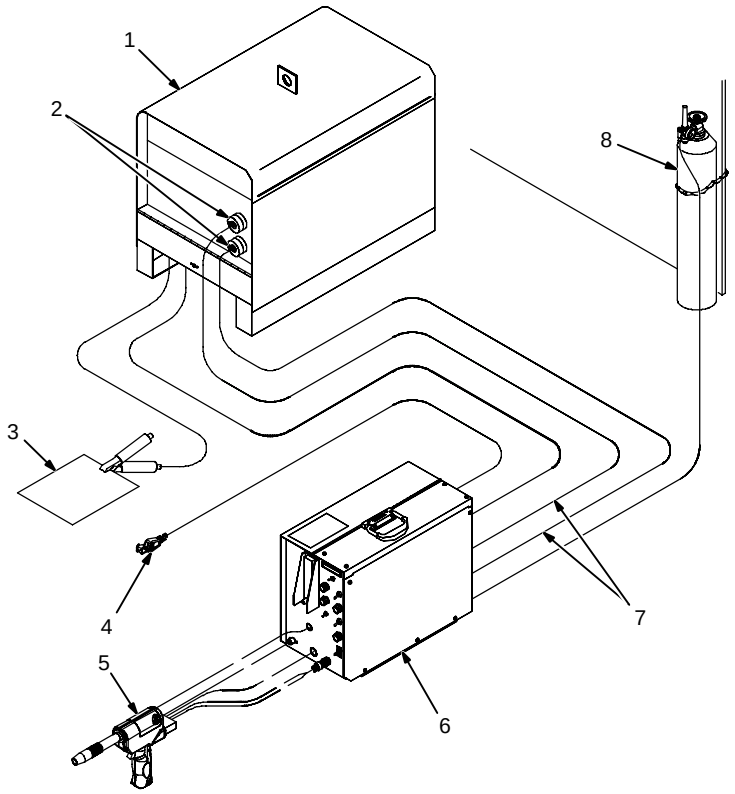
6 Wire Feeder

7 115 VAC/Contactor Control Cord

8 Gas Cylinder

151 774-D

## 4-2. Connections With A CV Welding Power Source Having Separate 115 VAC And Contactor Control Receptacles




1 Constant Voltage (CV) Welding Power Source

2 Plug

Obtain matching plugs for connecting to power source receptacles.

3 Workpiece

4 Voltage Sensing Lead

Do not connect to workpiece.

5 Gun

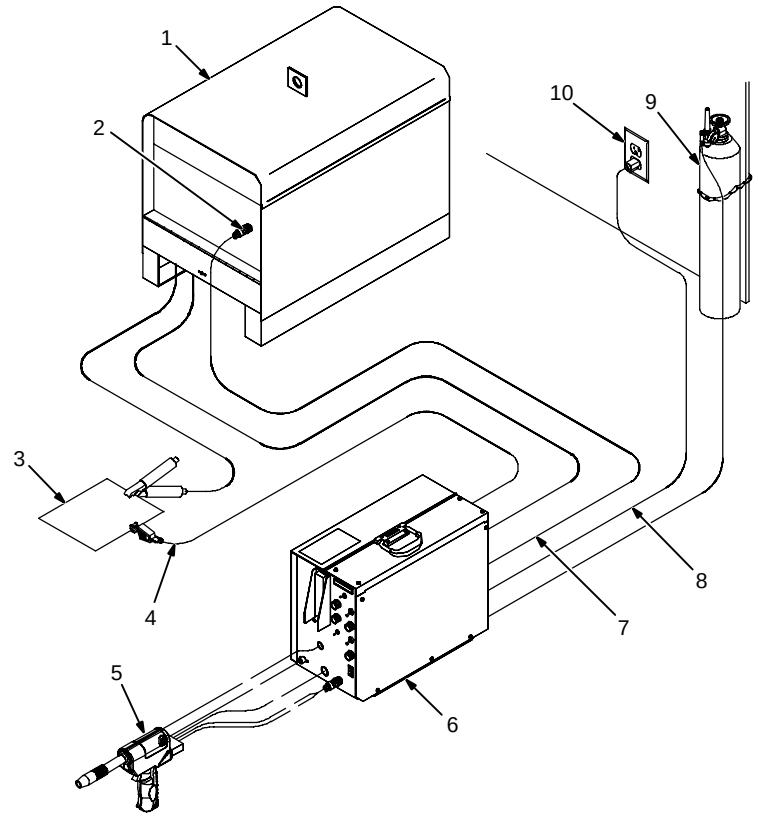
6 Wire Feeder

7 115 VAC/Contactor Control Cord

8 Gas Cylinder

151 775-E

## 4-3. Connections With A CC Welding Power Source Having A Contactor Control Receptacle




1 Constant Current (CC) Welding Power Source

2 5-Pin Or Two-Prong Twistlock Plug

3 Workpiece

4 Voltage Sensing Lead

5 Gun

6 Wire Feeder

7 3-Conductor Contactor Control Cord

8 3-Conductor 115 VAC Cord

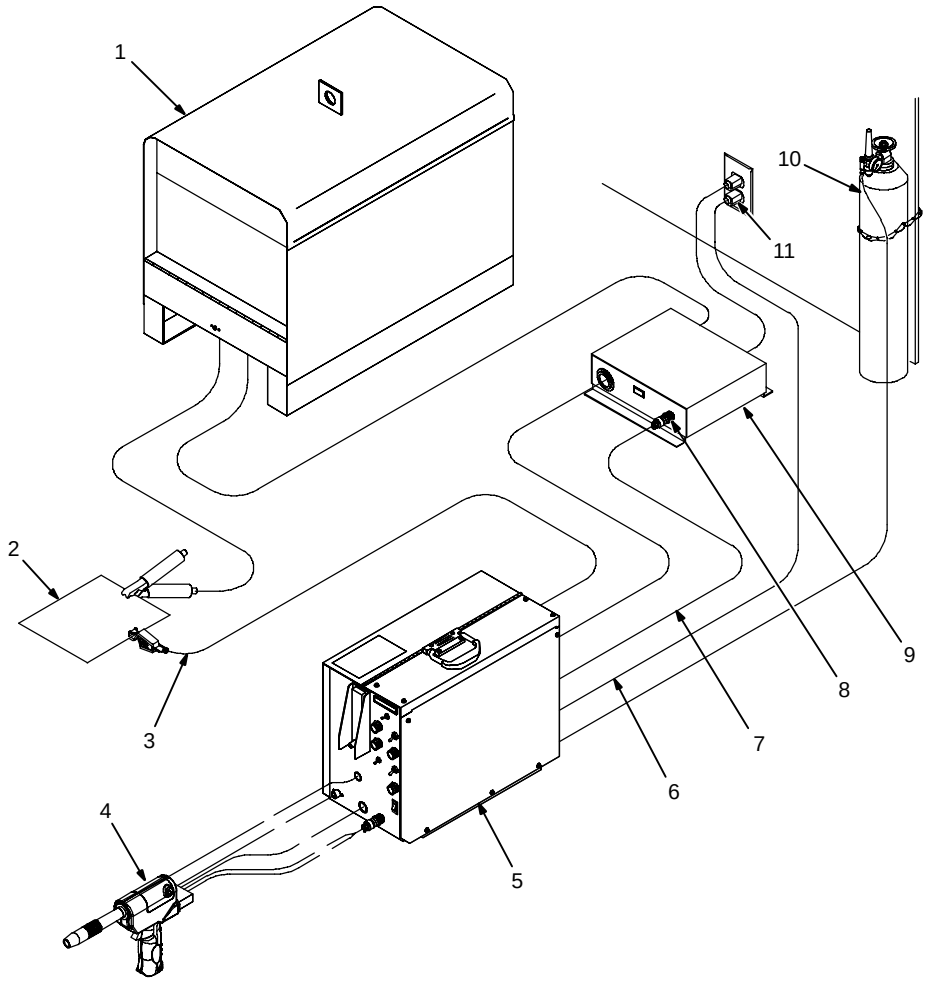
9 Gas Cylinder

10 115 VAC Plug

Obtain plug for wire feeder.

151 776-D

## 4-4. Connections With A CC Welding Power Source And A 115 VAC/12 VDC Secondary Contactor

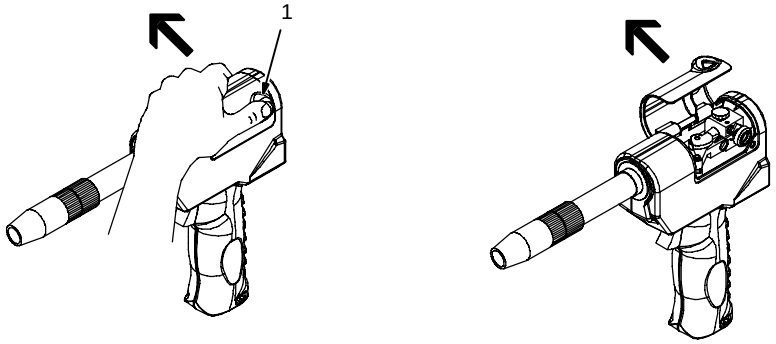



1 Constant Current (CC) Welding Power Source
2 Workpiece
3 Voltage Sensing Lead
4 Gun
5 Wire Feeder
6 3-Conductor 115 VAC Cord
7 3-Conductor Contactor Control Cord
8 5-Pin Plug
9 Secondary Contactor
10 Gas Cylinder
11 115 VAC Plug

Obtain plug for wire feeder.

151 777-D

## 4-5. Removing Top Cover Of Pistol Grip Gun




1 Top Cover Triangular Boss

Push up on triangular boss to open door. Door hinges on handle.

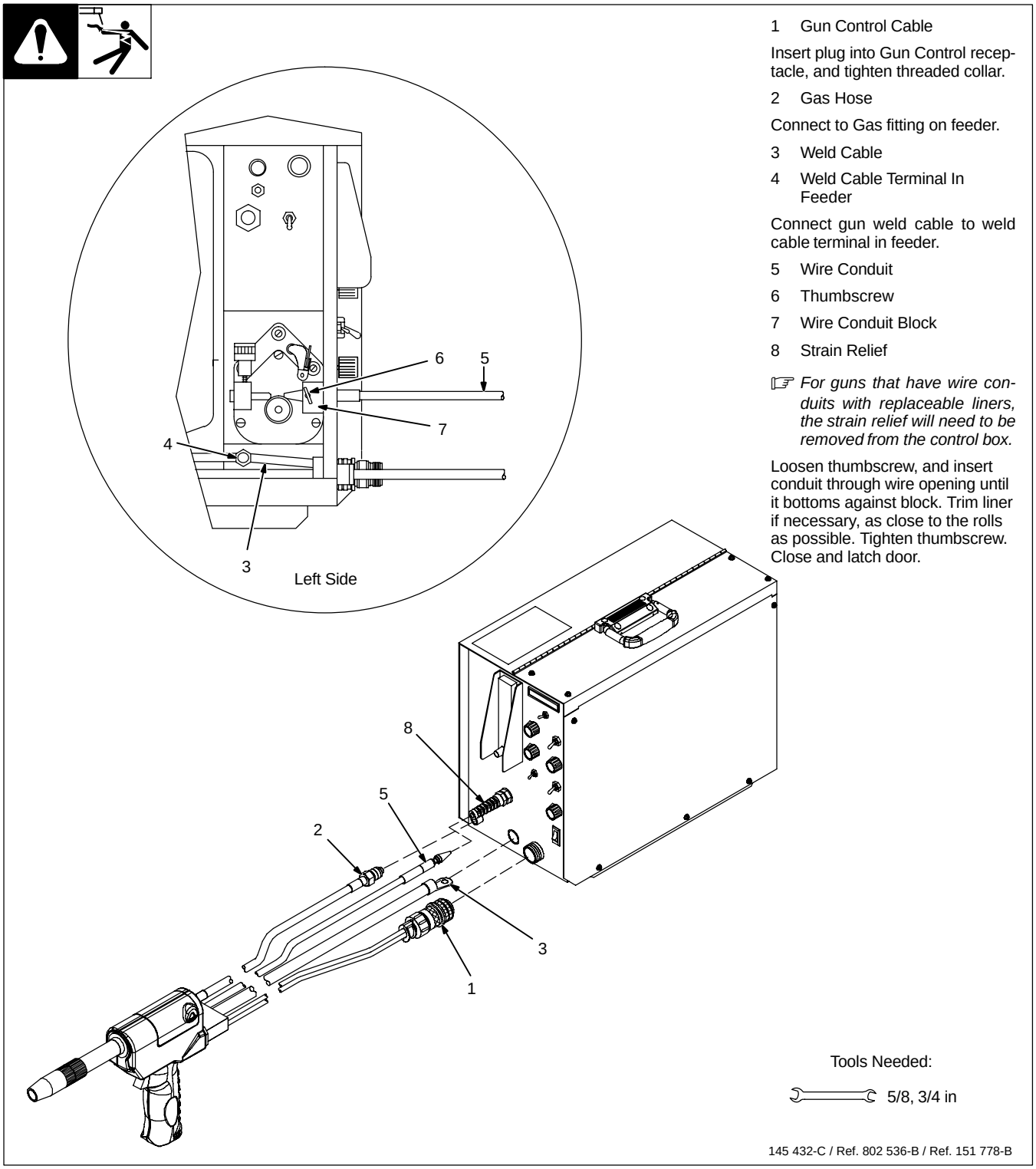
To open door fully, push up on door until it clicks into position.

☞ *If door is pushed too far it will separate from handle. If this happens the door can be reinstalled.*

Push door back into original position to close.

Ref. 802 528-B

## 4-6. Air-Cooled Gun Connections




1 Gun Control Cable

Insert plug into Gun Control receptacle, and tighten threaded collar.

2 Gas Hose

Connect to Gas fitting on feeder.

3 Weld Cable

4 Weld Cable Terminal In Feeder

Connect gun weld cable to weld cable terminal in feeder.

5 Wire Conduit

6 Thumbscrew

7 Wire Conduit Block

8 Strain Relief

☞ *For guns that have wire conduits with replaceable liners, the strain relief will need to be removed from the control box.*

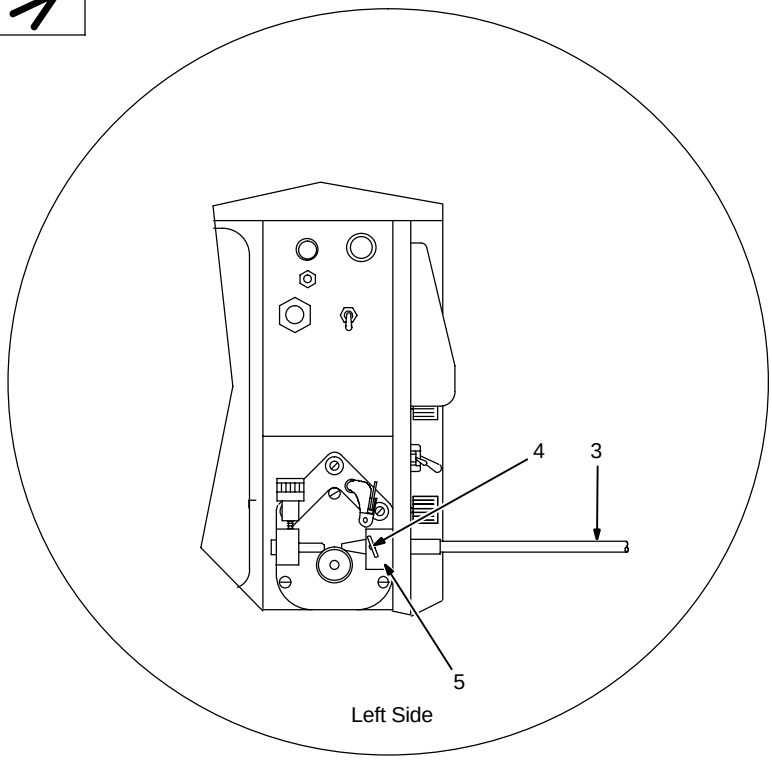
Loosen thumbscrew, and insert conduit through wire opening until it bottoms against block. Trim liner if necessary, as close to the rolls as possible. Tighten thumbscrew. Close and latch door.

Tools Needed:

5/8, 3/4 in

145 432-C / Ref. 802 536-B / Ref. 151 778-B

## 4-7. Water-Cooled Gun Connections



Left Side

1 Gas Hose

Connect to Gas fitting on feeder.

2 Water Hose

Connect to water to gun fitting on feeder (left-hand threads).

3 Wire Conduit

4 Thumbscrew

5 Wire Conduit Block

Loosen thumbscrew, and insert conduit through Wire opening until it bottoms against block. Trim liner if necessary, as close to the rolls as possible. Tighten thumbscrew.

6 Gun Control Cable

Insert plug into gun control receptacle, and tighten threaded collar.

7 Strain Relief

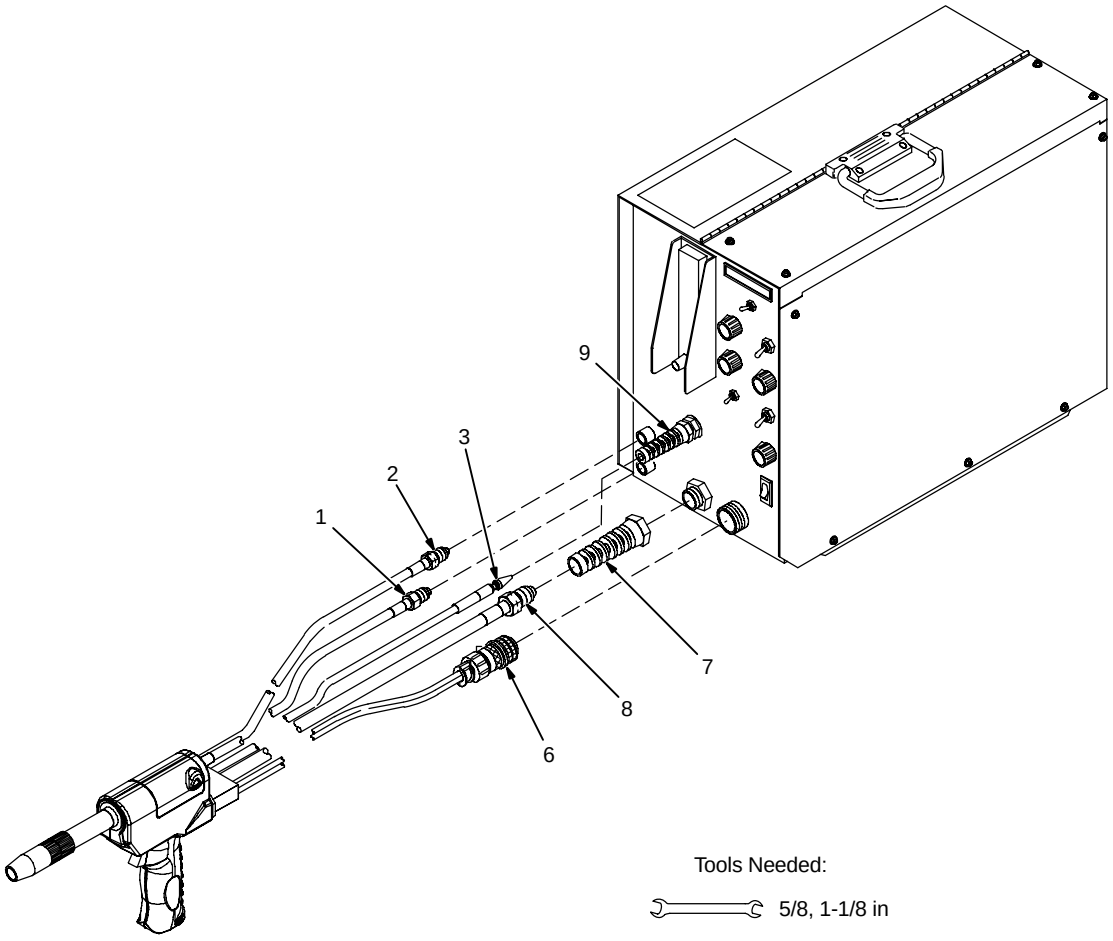
Remove strain relief as shown.

8 Power/Water Cable

9 Strain Relief

☞ *For guns that have wire conduits with replaceable liners, the strain relief will need to be removed from the control box.*

Route cable through strain relief and connect to weld/water from gun outlet on feeder. Reinstall strain relief. Close and latch door.

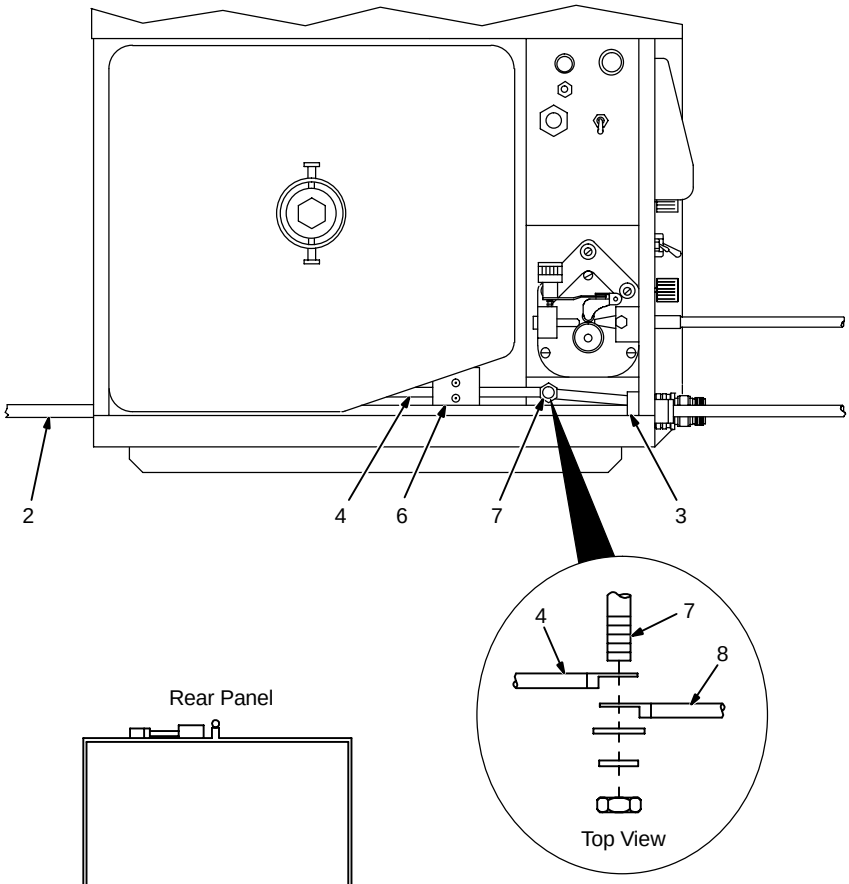



Tools Needed:

5/8, 1-1/8 in

Ref. 802 536-B / Ref. 151 778-B / 152 456-A

## 4-8. Air-Cooled Feeder Connections




1 Gas Hose Grommet

2 10 ft (3 m) Gas Hose

3 Rear Of Gas Fitting

Route one end of gas hose through grommet, and connect hose to rear of Gas fitting in feeder. Connect remaining end of hose to regulator/flowmeter

4 Weld Cable To Welding Power Source

Select and prepare weld cable according to welding power source manual.

5 Weld Cable Grommet

6 Current Sensing (Reed) Relay

7 Weld Cable Terminal In Feeder

Route one end of weld cable through grommet, through reed relay, and connect to weld cable terminal in feeder. Connect remaining end of cable to positive (+) weld output terminal on welding power source.

8 Gun Weld Cable

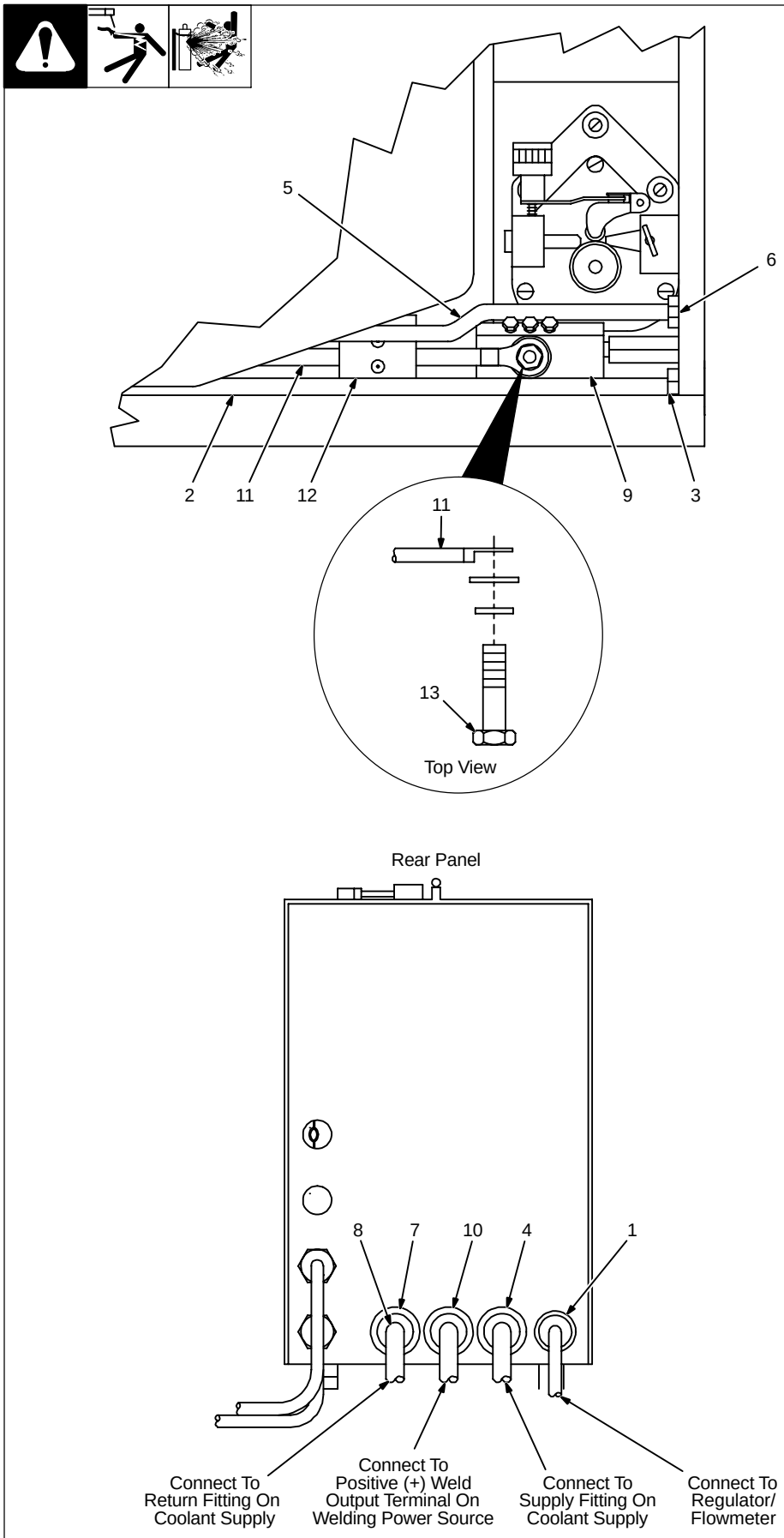
Be sure that terminal of welding power source weld cable is in direct contact with terminal from gun weld cable. Close and latch door.

Tools Needed:

5/8, 1-1/8 in

Ref. 151 771-A

## 4-9. Water-Cooled Feeder Connections




Obtain coolant supply.

1 Gas Hose Grommet

2 10 ft (3 m) Gas Hose

3 Rear Of Gas Fitting

Route one end of gas hose through grommet, and connect hose to rear of Gas fitting in feeder. Connect remaining end of hose to regulator/flowmeter

4 Coolant Supply Hose Grommet

5 10 ft (3 m) Water Supply Hose With 5/8 in Adapter Fitting

6 Rear Of Water Fitting (Left-Hand Threads)

Remove 5/8 in adapter fitting from hose. Route one end of a water hose through grommet, and connect to rear of Water To Gun fitting in feeder. Connect remaining end to supply fitting on coolant supply.

7 Coolant Return Hose Grommet

8 10 ft (3 m) Water Return Hose

9 Connection Block (Left-Hand Threads)

Route one end of remaining water hose through grommet, and connect to rear of connection block (not shown). Connect remaining end of hose to return fitting on coolant supply.

10 Weld Cable Grommet

11 Weld Cable To Welding Power Source

Select and prepare weld cable according to welding power source manual.

12 Current Sensing (Reed) Relay

13 Weld Cable Screw In Feeder

Route one end of weld cable through grommet, through reed relay, and connect to block in feeder using hardware shown. Connect remaining end of cable to positive (+) weld output terminal on welding power source.

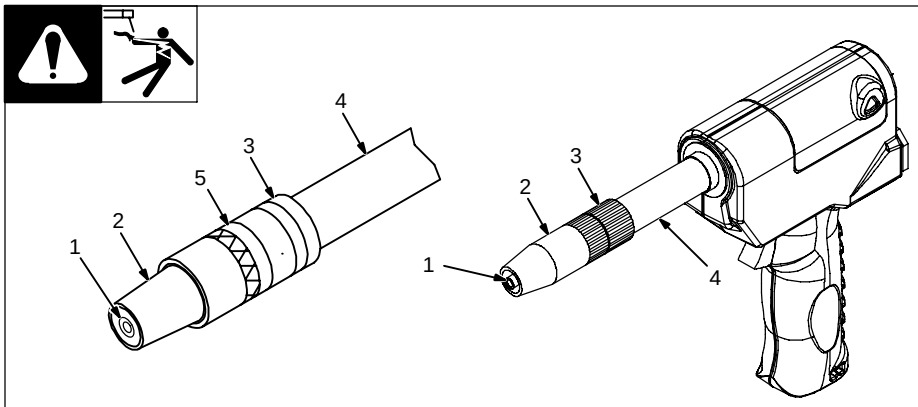
Close and latch door.

Tools Needed:

5/8, 1-1/8 in

Ref. 152 431-A

## 4-10. Adjusting FasTip Position




Water-Cooled Model

Air-Cooled Model

1 Contact Tip

2 Nozzle

Adjusting barrel changes contact tip location from 1/16 in (1.6 mm) out beyond end of nozzle to 1/4 in (6.3 mm) inside nozzle.

3 Nozzle Adapter Nut

To change contact tip location, loosen nozzle lock nut, and turn nozzle adapter. Tighten nozzle lock nut.

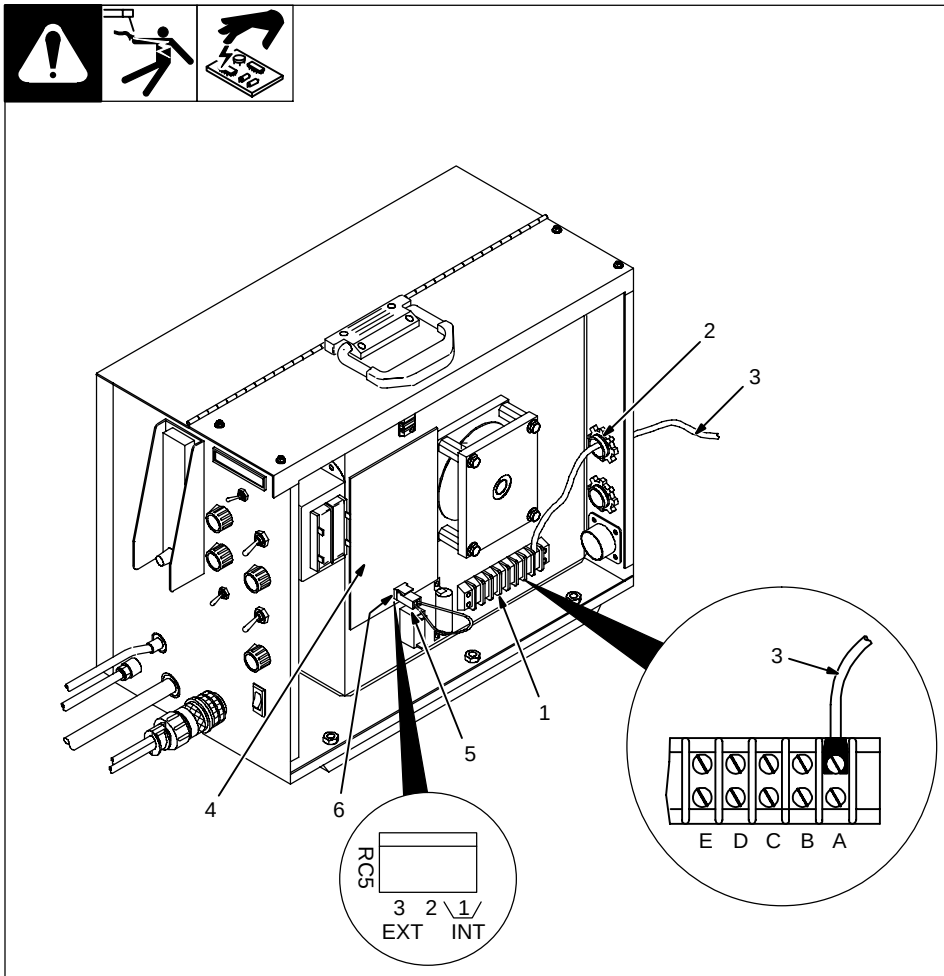
4 Barrel

5 Nozzle Adaptor

To change contact tip location, loosen jam nut, and nozzle adaptor. Tighten jam nut.

Ref. 151 666-D / Ref. 150 431

## 4-11. Voltage Sensing Lead Connections




Tools Needed:

1/4 in

Unit is factory set for constant voltage (CV) welding. To set unit for constant current (CC) welding, proceed as follows:

1 Terminal Strip 2T

2 Strain Relief

Loosen screws of strain relief.

3 Voltage Sensing Lead

Route ring terminal end of lead through strain relief, and connect ring terminal to terminal A of terminal strip 2T. Tighten screws on strain relief.

4 Motor Speed Control Board PC1

5 Jumper Plug

6 Receptacle RC5

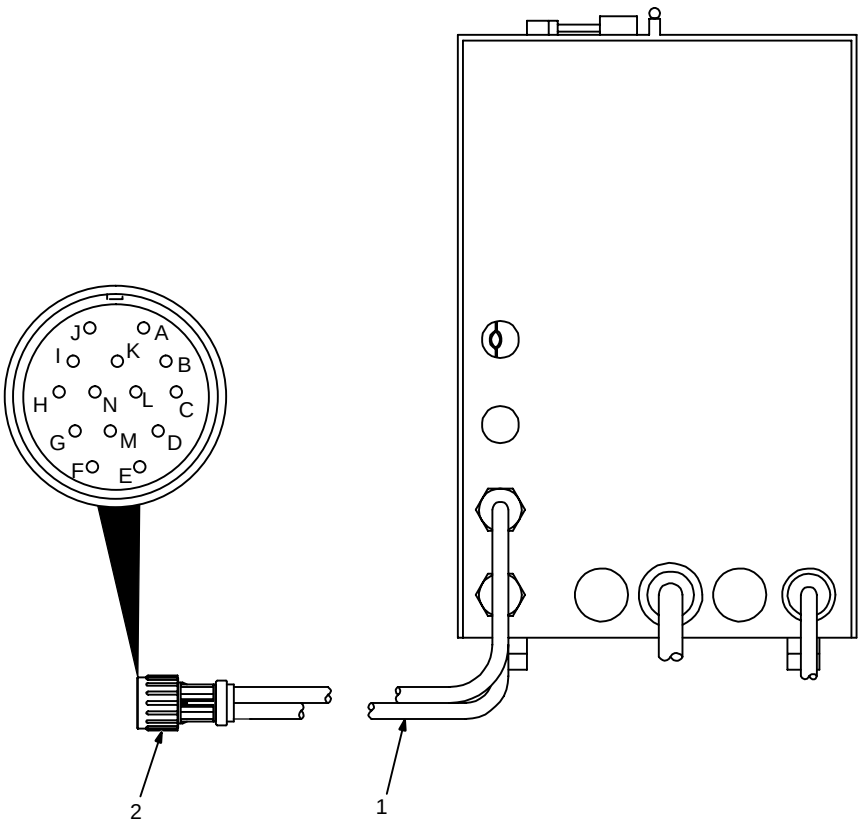
For constant voltage (CV) welding, place jumper plug in INT. position. Do not connect voltage sensing lead clamp to workpiece.

For constant current (CC) welding, place plug in EXT. position. Connect clamp end of voltage sensing lead to workpiece.

Reinstall right side panel.

Ref. 151 772-A

## 4-12. 115 VAC/Contactor Control Plug Information




1 Interconnecting Cord

2 115 VAC/Contactor Control Plug PLG5

If CC or CC/CV welding power source is equipped with matching 14-socket receptacle, insert plug, and tighten threaded collar. Proceed to Section 4-14.

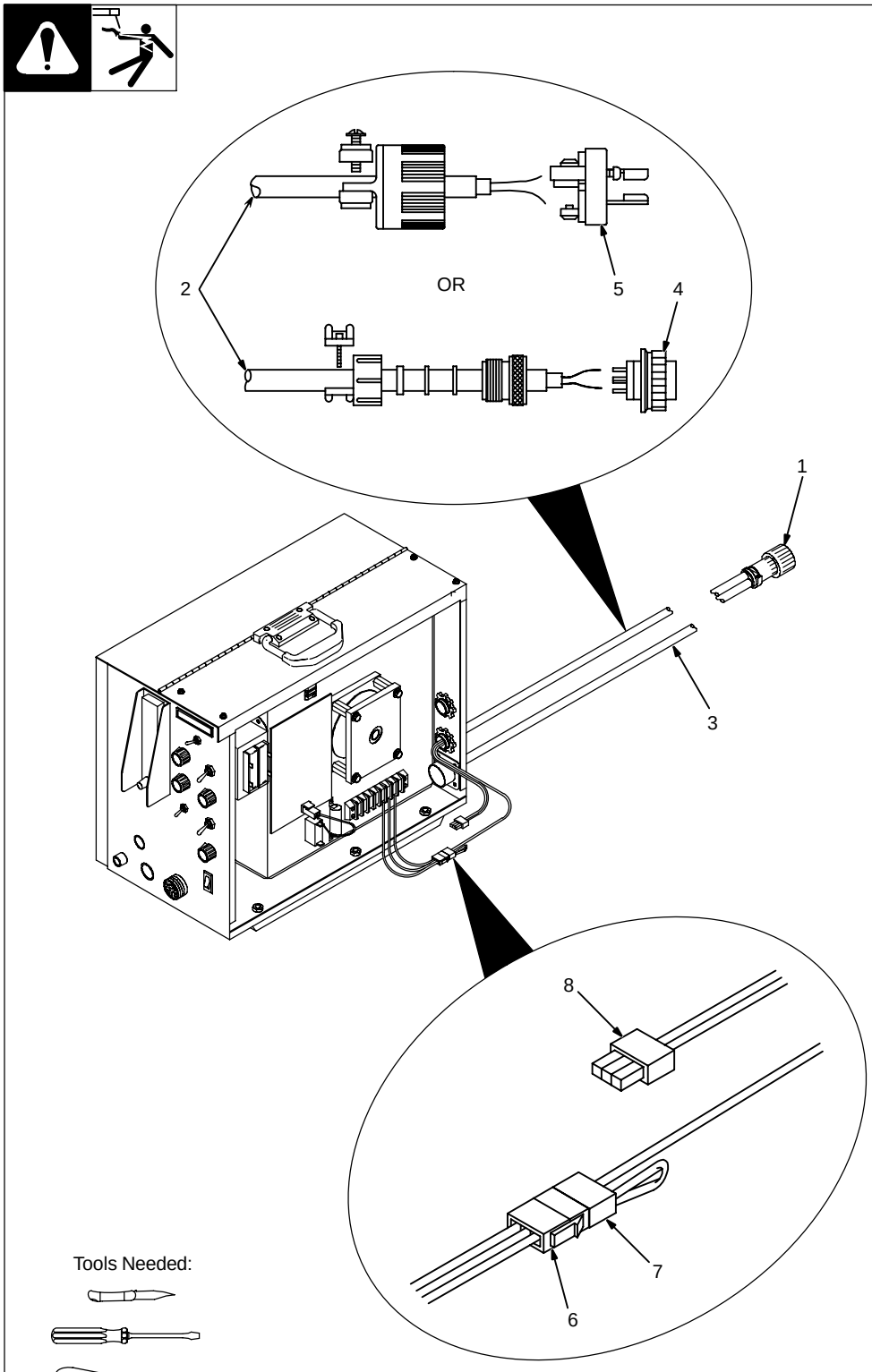
If plug PLG5 will not connect to CC welding power source receptacle, use the following pin information and Section 4-13 to replace PLG5 with a suitable plug.

| | Pin* | Pin Information |
|---|---|---|
| **Remote Contactor** | A, B | Contact closure to A completes contactor control circuit. |
| | I | 115 volts ac. |
| | J | Contact closure to I completes 115 volts ac contactor control circuit. |
| | G | Circuit common for 115 volts ac circuit. |
| **Remote Voltage Control** | C | +10 volts dc output to remote control. |
| | D | Remote control circuit common. |
| | E | 0 to +10 volts dc input command signal from remote control. |
| | K | Chassis common. |

*The remaining pins are not used.

Ref. S-0004-A / Ref. 151 772

## 4-13. Replacing 115 VAC/Contactor Control Plug With Customer-Supplied 5-Pin Or Twistlock Plug




1 115 VAC/Contactor Control Plug PLG5

2 Contactor Control Cord

3 115 VAC Cord

Find and label cords by following leads to back of PLG5:

Contactor control cord connects to pins A & B of PLG5

115 VAC cord connects to pin J of PLG5.

Cut off plug PLG5.

4 5-Pin Plug

5 Two-Prong Twistlock Plug

For connections shown in Figure 3-3 or Figure 3-4, install 5-pin or twistlock plug onto contactor control cord.

For Figure 3-2 connection, obtain plug to match contactor control receptacle on welding power source, and install plug onto contactor control cord.

Obtain 115 VAC plug and connect to 115 VAC cord as follows:

green lead to ground

white lead to 115 VAC common

black lead to 115 VAC hot.

6 Plug PLG50

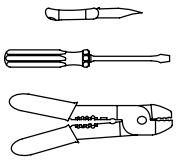
7 Plug PLG51

8 Plug PLG52

Unit shipped with PLG50 connected to PLG51 to provide 115 VAC for contactor.

If contact closure needed for contactor, connect PLG50 to PLG52.

Tools Needed:



151 773-C

## 4-14. Installing Wire Spool

Turn Off wire feeder and welding power source.

1 Wire Spool

2 Top Cover

3 Pressure Roll Assembly

4 Gun Contact Tip

If wire spool is being replaced, open pressure roll assembly in gun, and cut welding wire off at contact tip.

For welding power sources without contactor, retract wire onto spool.

For welding power sources with a contactor, energize power source, turn On feeder, press Brake Release button (see Section 5-11), and retract wire onto spool.

Close gun pressure roll assembly and reinstall top cover.

5 Hub

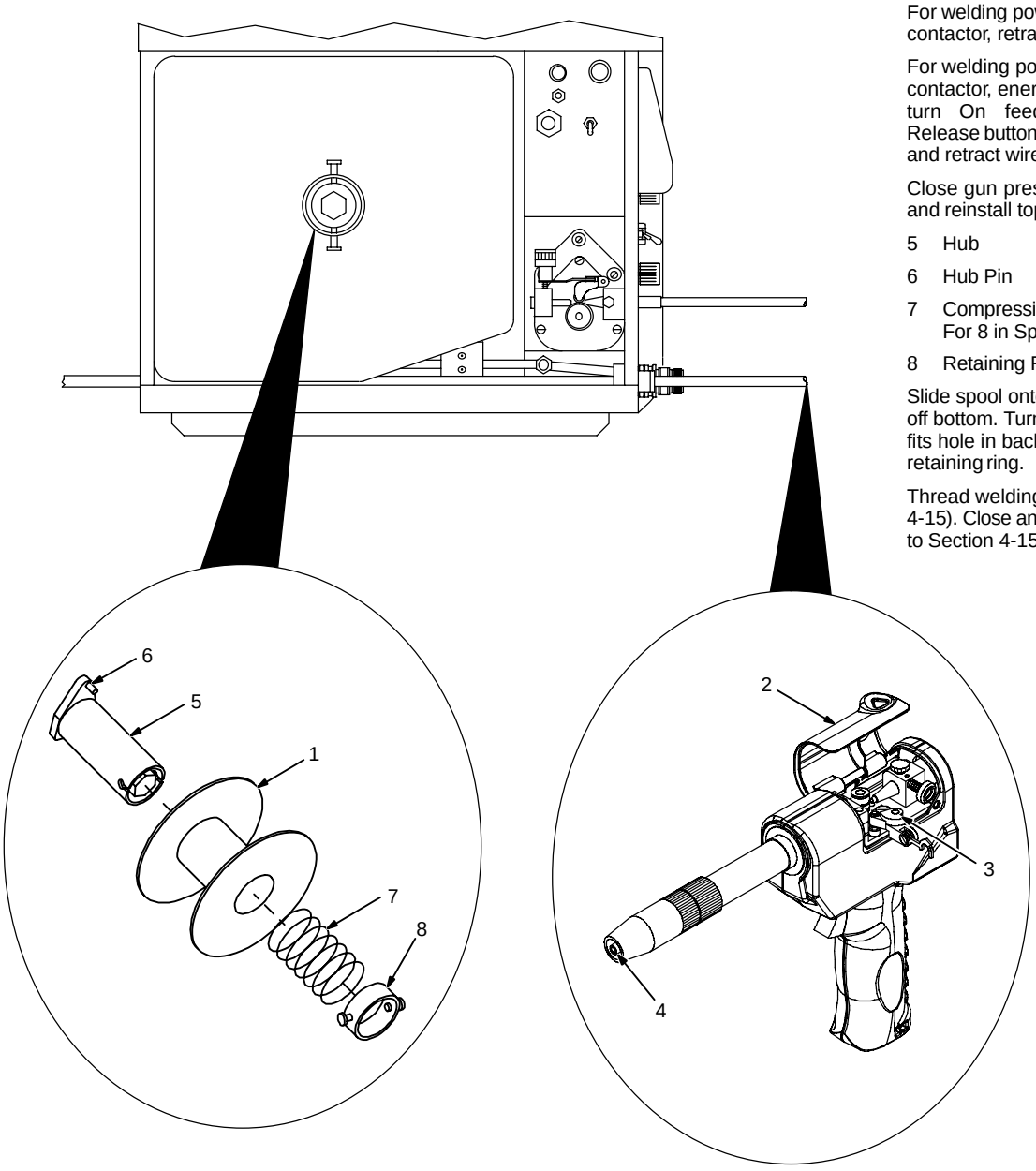
6 Hub Pin

7 Compression Spring (Optional For 8 in Spool)

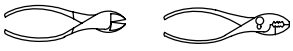
8 Retaining Ring

Slide spool onto hub so wire feeds off bottom. Turn spool until hub pin fits hole in back of spool. Reinstall retaining ring.

Thread welding wire (see Section 4-15). Close and latch door or go on to Section 4-15.

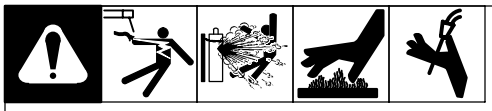


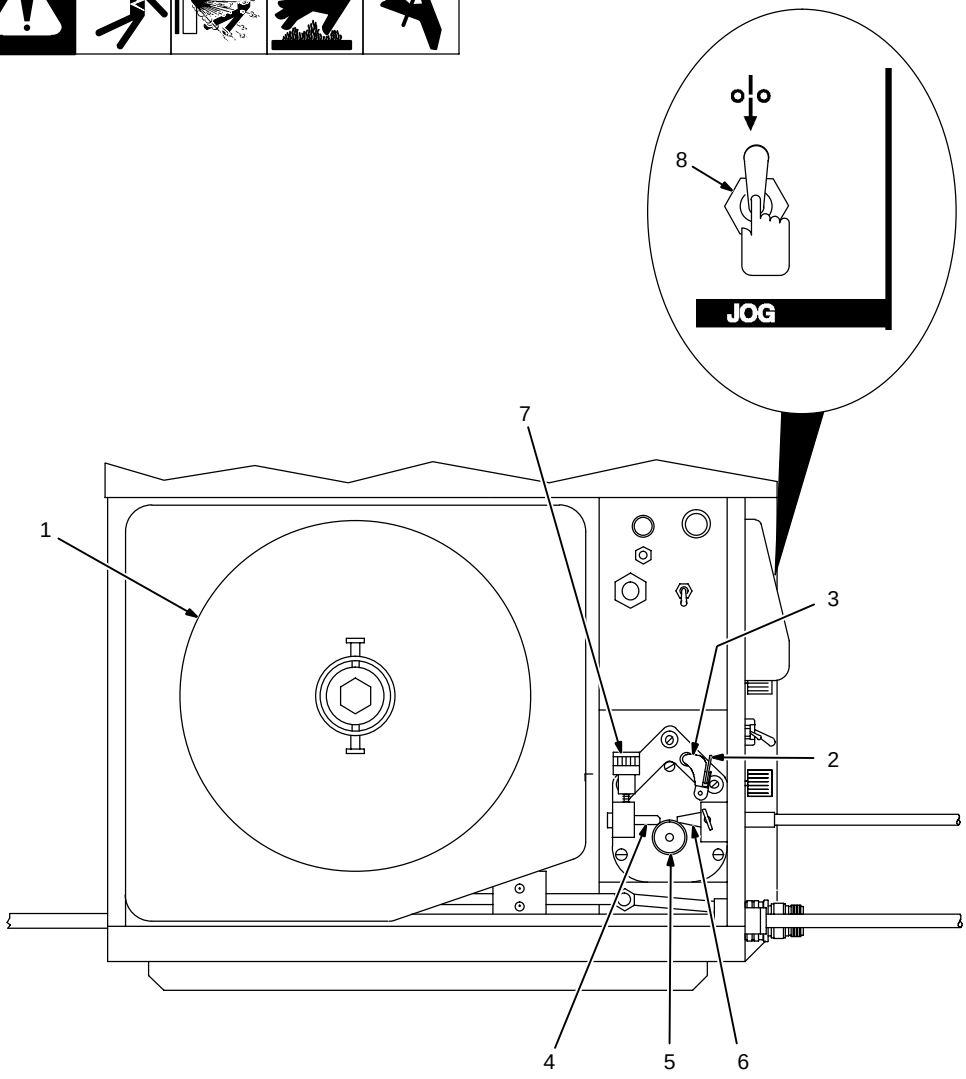

Tools Needed:



Ref. 151 771-A / Ref. 072 573-B / Ref. 151 599-E

## 4-15. Threading Welding Wire Through Feeder






1 Wire Spool

Loosen wire from spool, cut off bent wire, and pull 6 in (150 mm) of wire off spool.

2 Tension Arm

3 Mounting Arm

To open pressure roll assembly, open tension arm and lift mounting arm.

4 Wire Inlet Guide

5 Drive Roll

6 Wire Conduit Fitting

Thread wire through wire inlet guide, along drive roll groove, and into fitting.

Close and secure pressure roll assembly.

7 Tension Thumbnut

8 Jog Switch

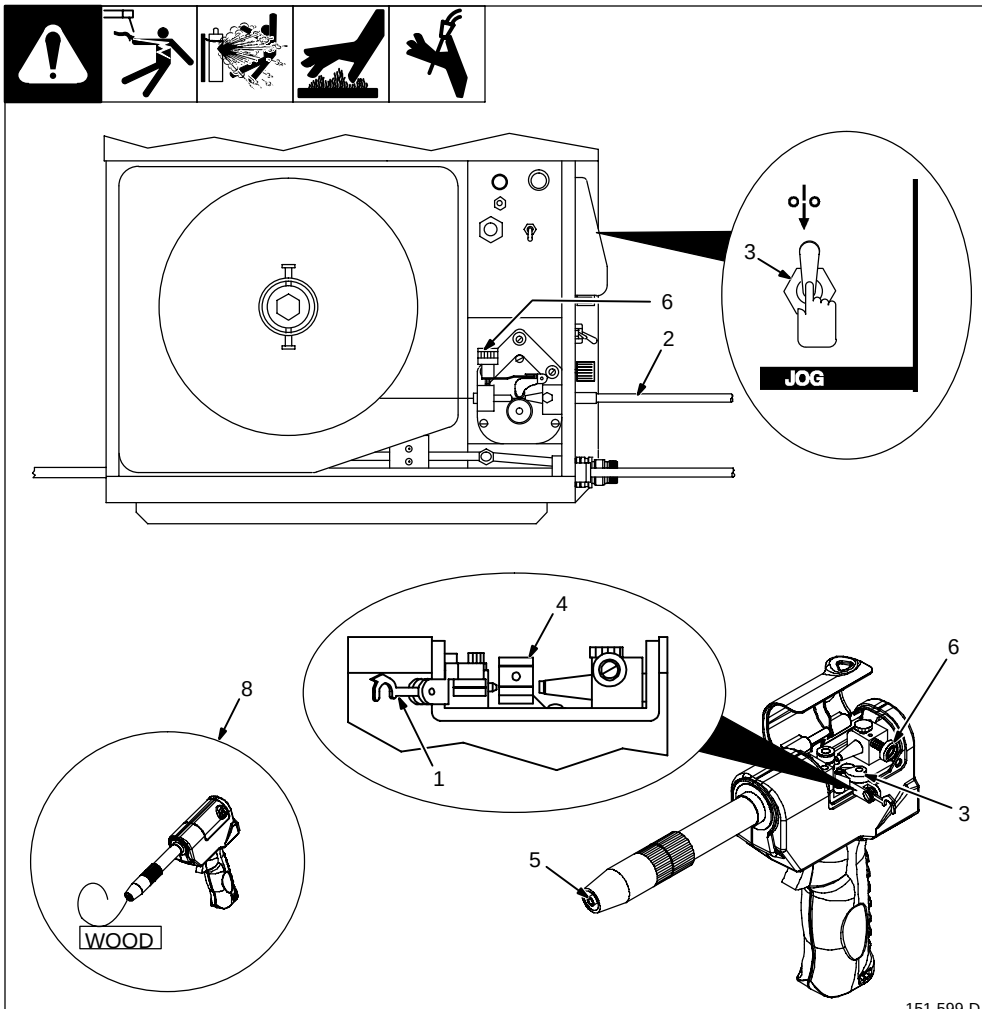
Turn On wire feeder. For proper adjustment, loosen thumbnut until drive roll slips when Jog switch is pushed up. Grasp spool with one hand, and turn thumbnut clockwise until motor stalls when Jog switch is pushed up.

Feed welding wire through gun (see Section 4-16). Turn Off wire feeder. Close and latch door.

Tools Needed:

151 778-B / Ref. 176 700-A

## 4-16. Threading Welding Wire Through Gun




1 Pressure Roll Assembly

Lift arm and open pressure roll assembly.

2 Wire Conduit

Lay wire conduit out straight.

3 Jog Switch

Push Jog switch up to feed wire through wire conduit.

4 Drive Roll

For wire sizes .035 in (0.9 mm) and smaller use small groove, and .047 in (1.2 mm) and 1/16 in (1.6 mm) use large groove.

5 Contact Tip

Manually thread wire along drive roll groove and out contact tip 2 in (51 mm). Close pressure roll assembly.

6 Tension Thumbnut

7 Pressure Adjustment Knob

8 Final Pressure Adjustment

Turn On feeder and check drive roll pressure by feeding wire against a piece of wood or concrete surface; wire should feed steadily without slipping. If necessary, adjust pressure adjustment knob in gun.

Turn Off feeder and welding power source. Reinstall gun cover. Close and latch feeder door.

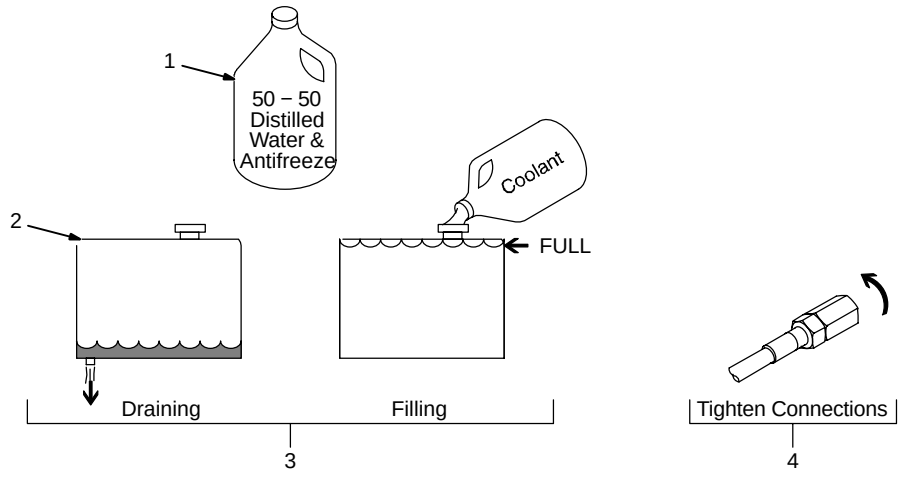
151 599-D / 151 666-D / Ref. 176 700-A / Ref. S-0651

## 4-17. Coolant Guidelines

**⚠ CAUTION**

**INCORRECT COOLANT OR COOLANT CONTAINING STOP-LEAK ADDITIVES can corrode and/or plug gun/feeder cooling passages.**

- Use only a mix of 50% distilled water and 50% high quality automotive antifreeze as proper coolant for this product.
- Do not use antifreeze containing stop-leak additives.
- Use of other coolant voids warranty.




Follow these guidelines to decrease corrosion in gun/feeder and cooling system:

1 Coolant

Mix distilled water and high quality automotive antifreeze. Use anti-freeze which does not contain stop-leak additives.

Use of other coolant voids warranty.

2 Coolant System Tank

3 Changing Coolant

Change coolant only if dirty.

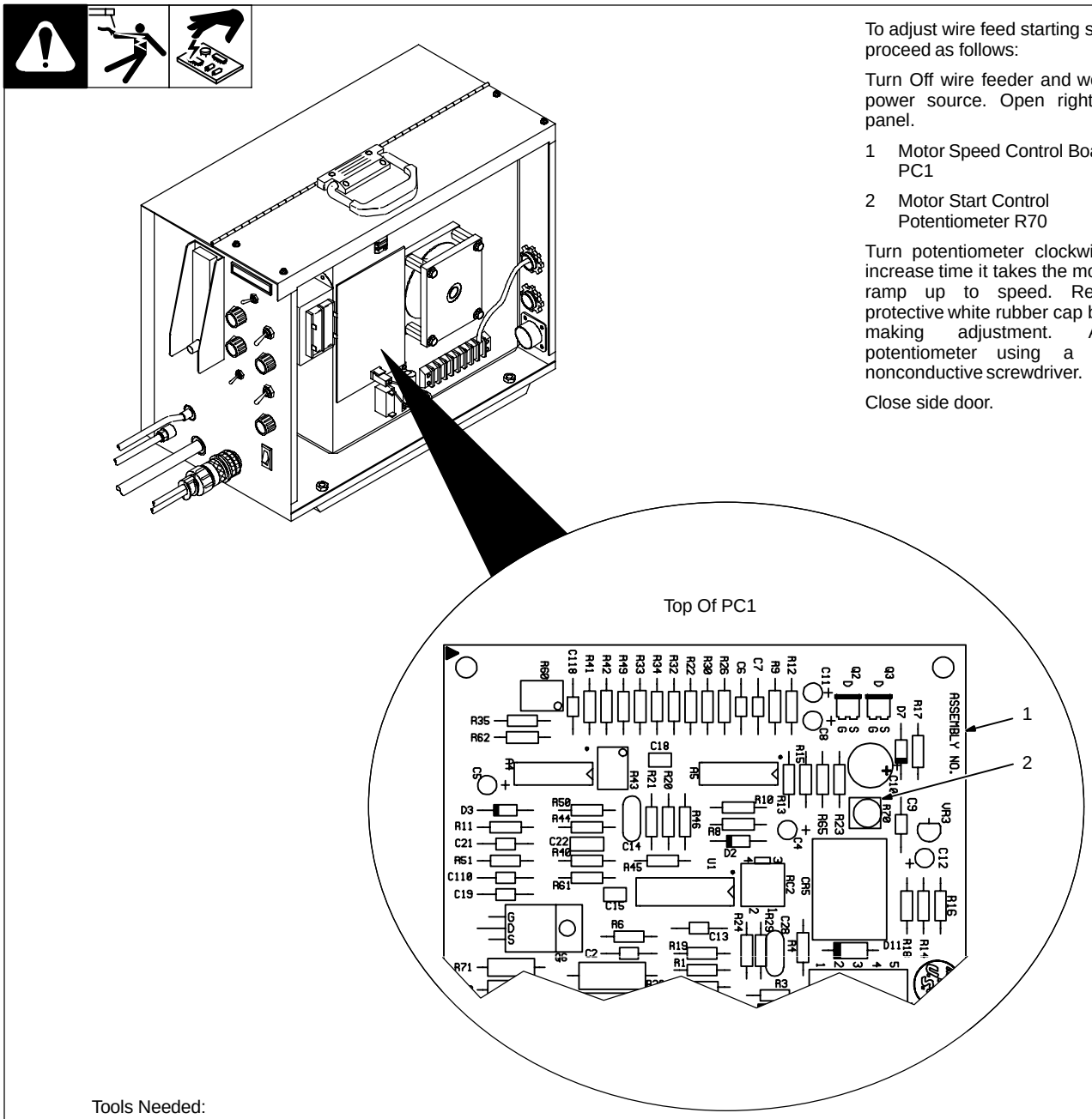
Add coolant to keep level full.

4 Tighten Connections

Keep gun connections tight.

S-0760

## 4-18. Adjusting Wire Feed Starting Speed




To adjust wire feed starting speed, proceed as follows:

Turn Off wire feeder and welding power source. Open right side panel.

1 Motor Speed Control Board PC1

2 Motor Start Control Potentiometer R70

Turn potentiometer clockwise to increase time it takes the motor to ramp up to speed. Remove protective white rubber cap before making adjustment. Adjust potentiometer using a small nonconductive screwdriver.

Close side door.

Tools Needed:

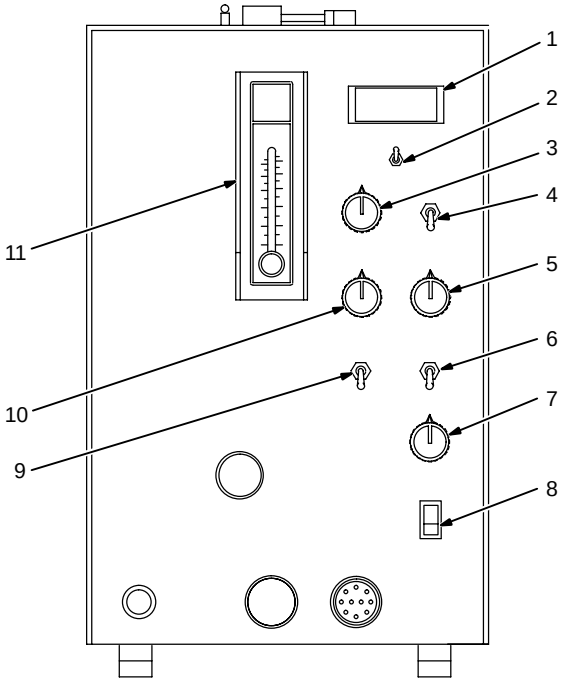
Nonconductive

1/4 in

Ref. 151 772-A / Ref. 142 054-B

# SECTION 5 − OPERATION

## 5-1. Front Panel Controls Of Feeder (Air-Cooled Model Shown)




1 Voltage/Wire Speed Meter (Optional)

2 Voltage/Wire Speed Switch (Optional)

3 Run-In Speed Control

4 Jog Switch

5 Burnback Time Control (Optional)

6 Spot/Continuous Switch (Optional)

7 Remote Voltage Control (Optional)

8 Power Switch

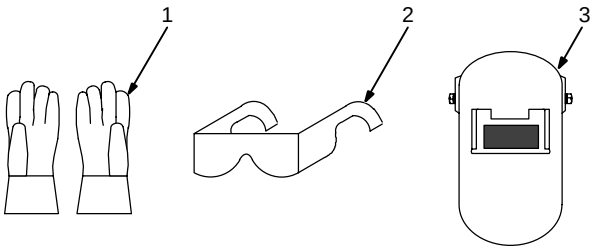
9 Time Range Switch (Optional)

10 Spot Time Control (Optional)

11 Flowmeter (Optional)

151 780−A

## 5-2. Safety Equipment




Wear the following while welding:

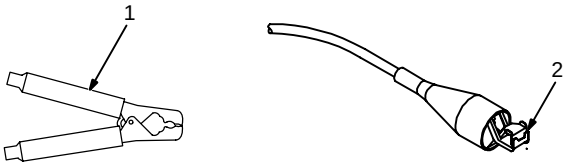
1 Dry, Insulating Gloves

2 Safety Glasses With Side Shields

3 Welding Helmet With Correct Shade Of Filter (See ANSI Z49.1)

sb3.1 1/94

## 5-3. Work And Voltage Sensing Cable Clamps




Tools Needed:

1 Work Clamp

Connect work clamp to a clean, paint-free location on workpiece, as close to weld area as possible.

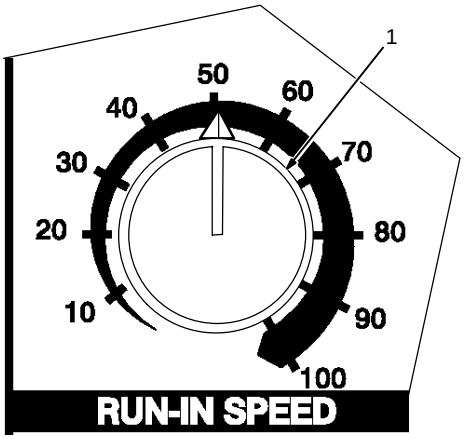
Use wire brush or sandpaper to clean metal at weld joint area.

2 Voltage Sensing Cable Clamp

Connect voltage sensing cable clamp to workpiece for constant current (CC) operations (see Section 4-11).

sb4.1* 2/93 − Ref. 144 451-A

## 5-4. Run-In Speed Control




1 Run-In Speed Control

Use control to set wire feed speed before arc initiation.

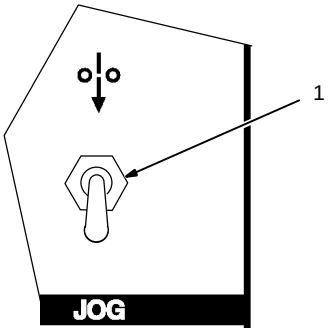
After arc initiation, wire feed speed is controlled by the Wire Speed Control on the welding gun (see Section 5-12).

The scale around the control is percent of full range, not wire speed. As a general rule, set run-in speed lower than welding wire feed speed.

Set control at 0 (zero) for scratch start.

Ref. 176 700-A

## 5-5. Jog Switch

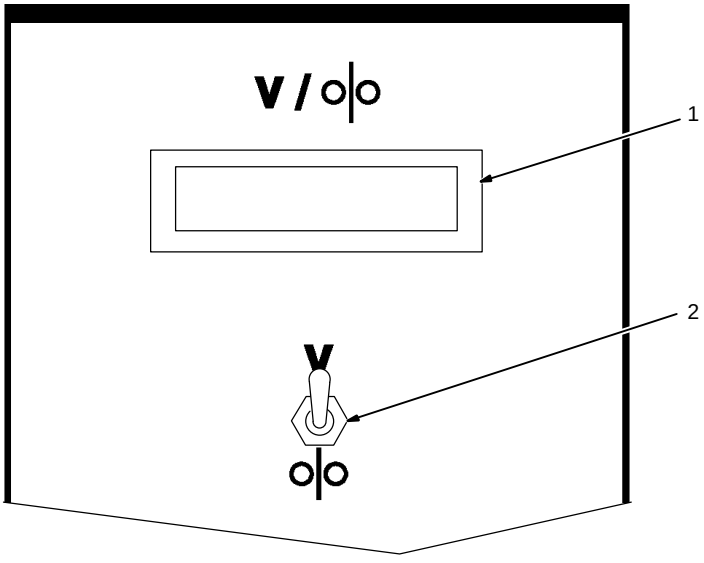



1 Jog Switch

Use switch to energize drive motors in feeder and gun without energizing welding power source contactor. When switch is held up in Jog position, wire speed is set by Wire Speed Control on gun.

## 5-6. Voltage/Wire Speed Switch And Meter (Optional)

*Volt sensing lead must be connected to workpiece for meters to operate.*




1 Voltage/Wire Speed Meter

2 Voltage/Wire Speed Switch

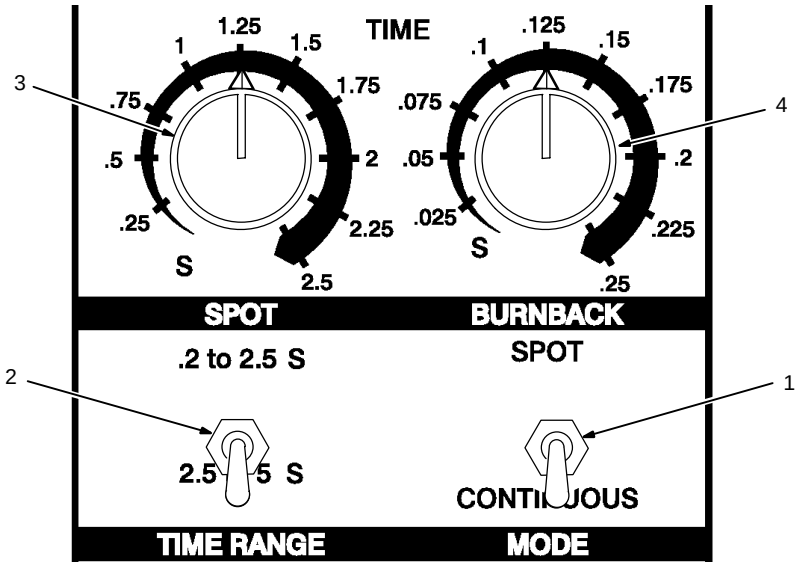
When switch is in Voltage position, and operator is welding, meter displays arc voltage. Cable resistance and poor connections may cause displayed voltage to vary slightly from actual voltage at welding arc.

When switch is in Wire Speed position and operator is welding, meter displays preset wire speed in inches per minute. This wire speed is set by Wire Speed Control on the gun.

During run-in portion of weld cycle, meter displays run-in speed as selected on Run-In Speed control on feeder (see Section 5-4).

When welding Direct Current Electrode Negative (DCEN), meter does not display accurate output voltages; however, meter displays accurate wire speed values.

## 5-7. Spot Controls (Optional)




1 Spot/Continuous Switch

Use switch to select either an untimed continuous weld cycle or a timed spot weld cycle. Both weld cycles consist of the following steps: run-in, weld (untimed or spot time), and burnback.

2 Time Range Switch

Use switch to select spot weld time range.

3 Spot Time Control

Use control to set spot weld time. Welding wire feeds at speed selected on the gun Wire Speed Control. Spot time starts at arc initiation.

The scale around the control is marked in seconds.

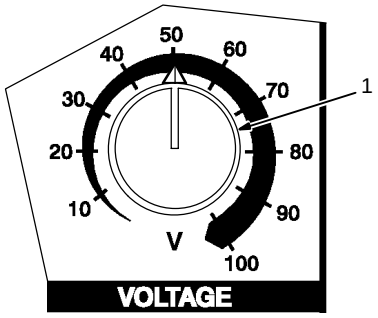
4 Burnback Time Control

Use control to adjust time (up to 0.25 seconds) that the welding wire is electrically energized after the wire stops feeding.

If welding wire sticks in the weld puddle, increase burnback time. If wire burns back into the gun contact tip, decrease burnback time.

The scale around the control is marked in fractions of a second.

## 5-8. Remote Voltage Control (Optional)

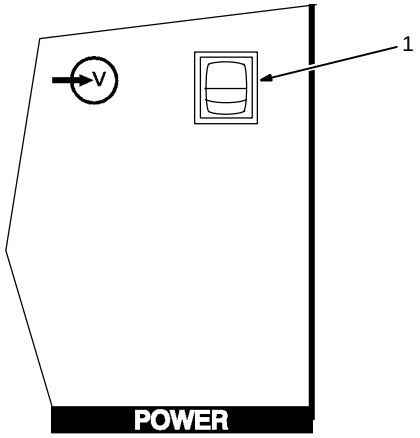



1 Voltage Control

Use control to adjust arc voltage at the wire feeder.

The scale around the control is marked in percent.

## 5-9. Power Switch




1 Power Switch

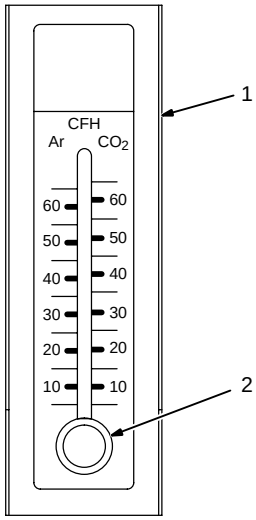
Use switch to turn unit On and Off.

## 5-10. Flowmeter (Optional)

**⚠ CAUTION**

**Wire feeding system is designed for maximum of 50 psi (345 kPa) gas pressure.**

- Be sure that regulator/flowmeter has preset conditions of no more than 50 psi (345 kPa) gas pressure.




1 Flowmeter

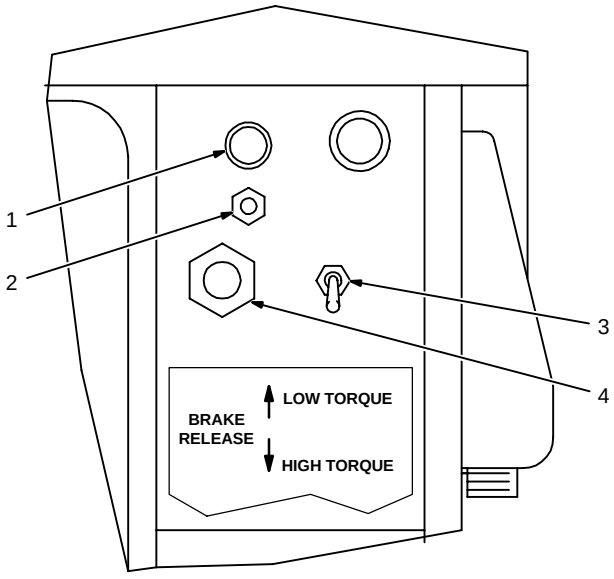
2 Valve

Use flowmeter to control shielding gas flow at the feeder. The scale on the flowmeter is in cubic feet per hour (CFH). Read gas flow at the widest part of the float in the meter. Rotate valve to change gas flow as necessary.

A regulator is still required on shielding gas supply with this option.

S-0659

## 5-11. Internal Controls




Open left side door.

1 Fuse F1

See Section 6-12.

2 Circuit Breaker CB1

See Section 6-12.

3 Motor Torque Switch

Use switch to select the force used to push wire. The up position is for low force, or torque. The down position is for high force, or torque.

If welding wire appears to be kinked, nicked, or damaged, place switch in low torque position.

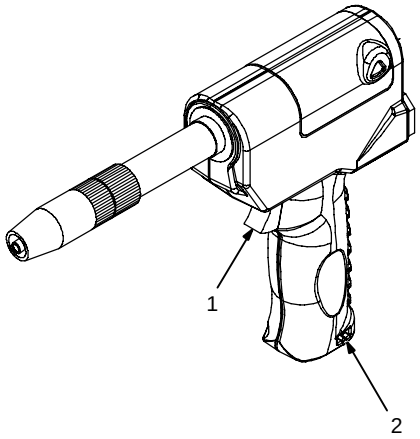
4 Brake Release Button

Whenever power is On and the welding power source is energized, button may be pressed to release spool brake so wire spool can turn freely.

Close and latch door.

Ref. 151 779 / Ref. S-120 552-A

## 5-12. Gun Controls




1 Trigger

Press trigger to energize welding power source contactor (if applicable), start shielding gas flow, and begin wire feed.

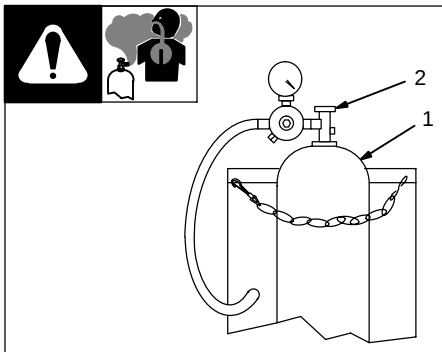
For shielding gas preflow and postflow, partially press trigger before and partially release after welding.

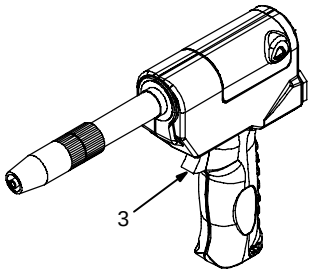
2 Wire Speed Control

Use control to adjust wire feed speed. The numbers around the control are for reference only.

Ref. 151 666-D

## 5-13. Shielding Gas




1 Shielding Gas Cylinder

2 Valve

3 Gun Trigger

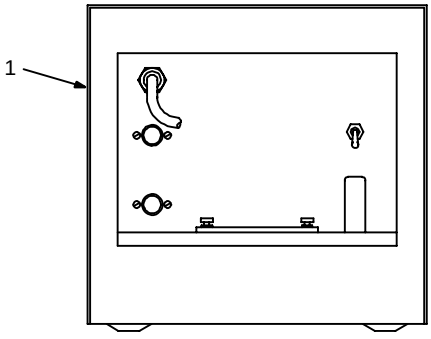
Open valve on cylinder just before welding.

Gun trigger turns weld output and gas flows on and off (see Section 5-12).

Close valve on cylinder when finished welding.

sb5.1 6/92 − S-0621-C / Ref. 151 666-D

## 5-14. Coolant Supply For Water-Cooled Models Only




1 Coolant Supply

See Section 4-17 for coolant guidelines.

Turn On coolant supply before welding.

Turn Off coolant supply when finished welding.

Ref. 150 755-A

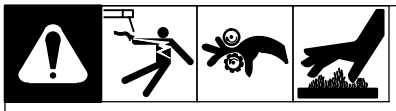
## 5-15. Sequence Of Gas Metal Arc Welding (GMAW) − Continuous Or Spot

Install & Connect Equipment → Put On Personal Safety Equipment → Set Controls → Turn On Gas And Water (If Applicable) → Turn On Feeder And Welding Power Source → Begin Welding

ssb6.1* 9/92

# SECTION 6 − MAINTENANCE & TROUBLESHOOTING

## 6-1. Routine Maintenance

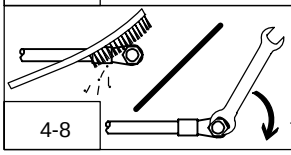


**Turn Off all power before maintaining.**

### 3 Months

See Section 7

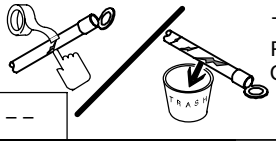
Replace Unreadable Labels



4-8

Clean And Tighten Weld Terminals

### 3 Months

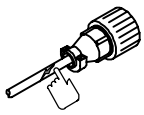



– –

Tape Or Replace Cracked Weld Cable

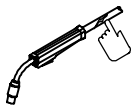
– –

Replace Cracked Parts



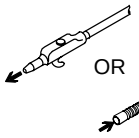
14-Pin Cord

Gas Hose

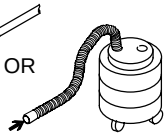


Gun Cable

### 6 Months



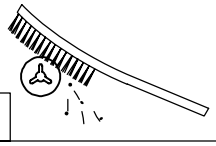
OR



Blow Out Or Vacuum Inside

– –

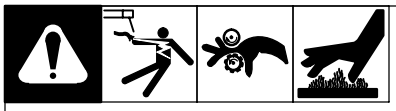
During Heavy Service, Clean Monthly

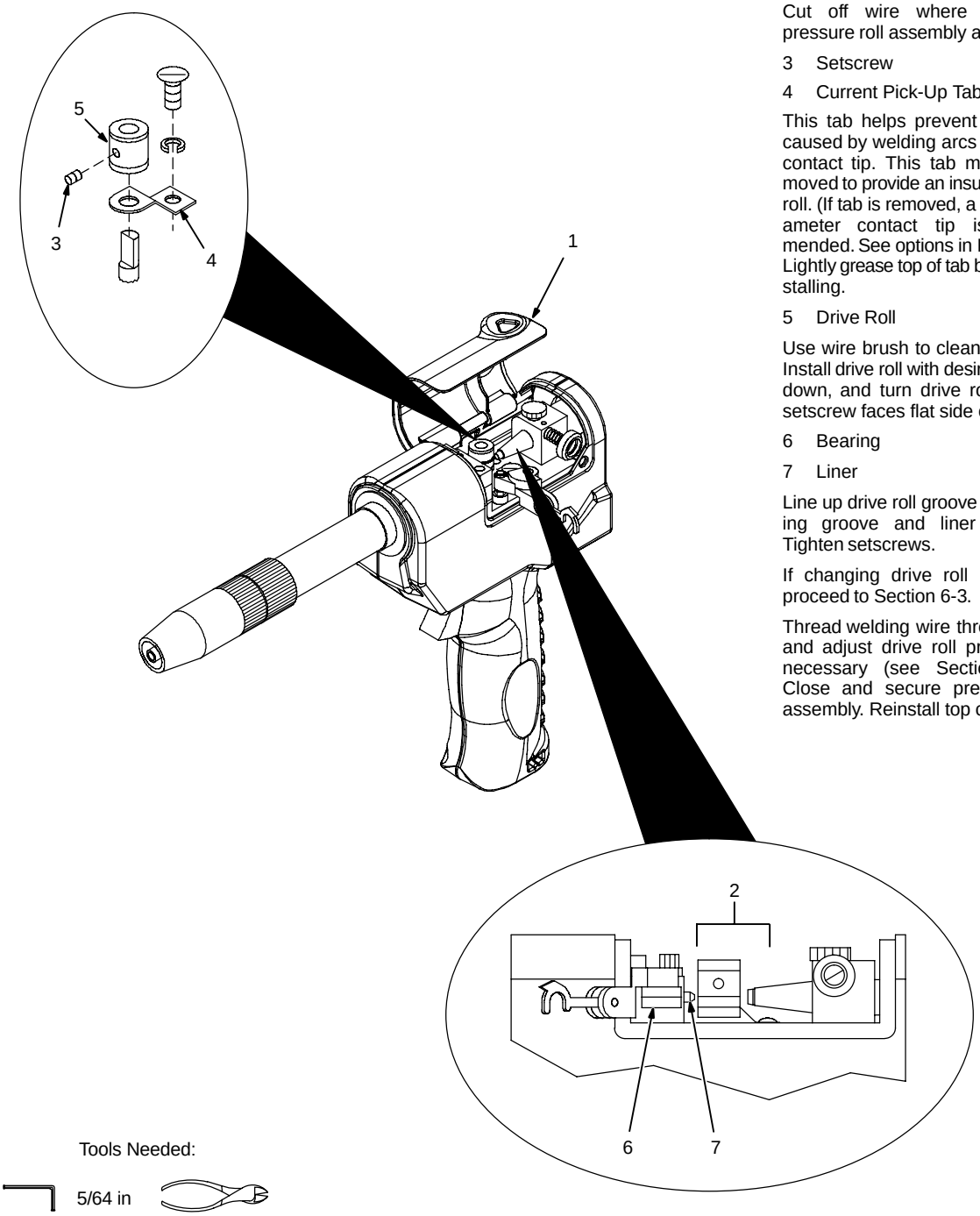


5-2

Clean Drive Rolls

## 6-2. Changing Or Cleaning Gun Drive Roll






Turn Off wire feeder and welding power source.

1 Top Cover

2 Pressure Roll Assembly

Cut off wire where it enters pressure roll assembly area.

3 Setscrew

4 Current Pick-Up Tab

This tab helps prevent burnback caused by welding arcs inside the contact tip. This tab may be removed to provide an insulated drive roll. (If tab is removed, a smaller diameter contact tip is recommended. See options in Parts List.) Lightly grease top of tab before reinstalling.

5 Drive Roll

Use wire brush to clean drive roll. Install drive roll with desired groove down, and turn drive roll so one setscrew faces flat side of shaft.

6 Bearing

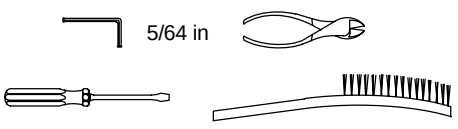
7 Liner

Line up drive roll groove with bearing groove and liner opening. Tighten setscrews.

If changing drive roll in feeder, proceed to Section 6-3.

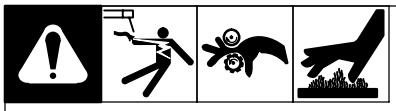
Thread welding wire through gun, and adjust drive roll pressure, if necessary (see Section 4-16). Close and secure pressure roll assembly. Reinstall top cover.

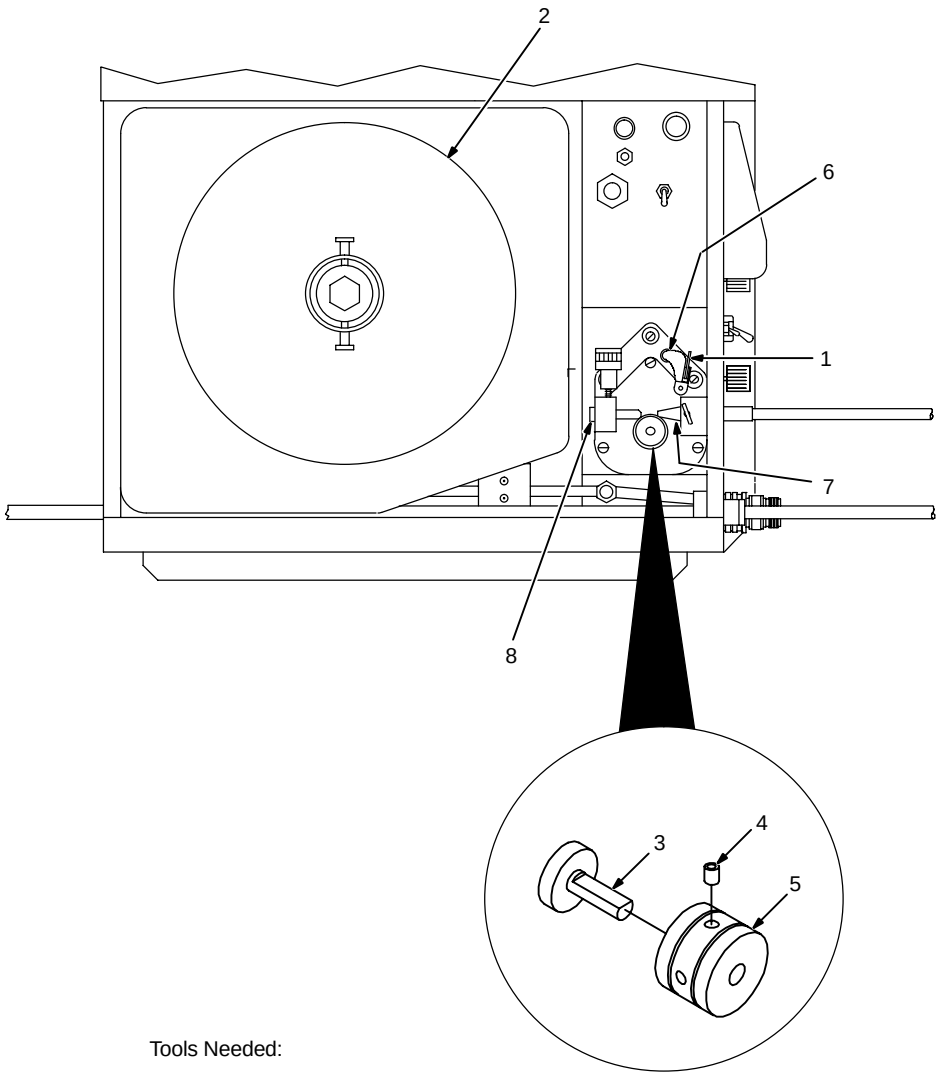
Tools Needed:




Ref. 151 599-E

## 6-3. Changing Feeder Drive Roll And Wire Inlet Guide

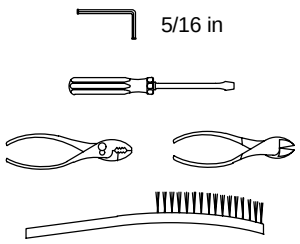








Tools Needed:




Turn Off wire feeder and welding power source. Lay wire conduit out straight.

Open gun pressure roll assembly, and cut welding wire off at contact tip.

1 Pressure Roll Assembly

2 Wire Spool

For welding power sources without contactor, retract wire onto spool.

For welding power sources with a contactor, energize power source, turn On feeder, press Brake Release button, and retract wire onto spool.

3 Shaft

4 Setscrew

5 Drive Roll

Use wire brush to clean drive roll. Install drive roll with desired groove in, and turn drive roll so one setscrew faces flat side of shaft.

6 Bearing

7 Wire Conduit Fitting

Line up drive roll groove with bearing groove and opening in conduit fitting. Tighten setscrews.

8 Wire Inlet Guide

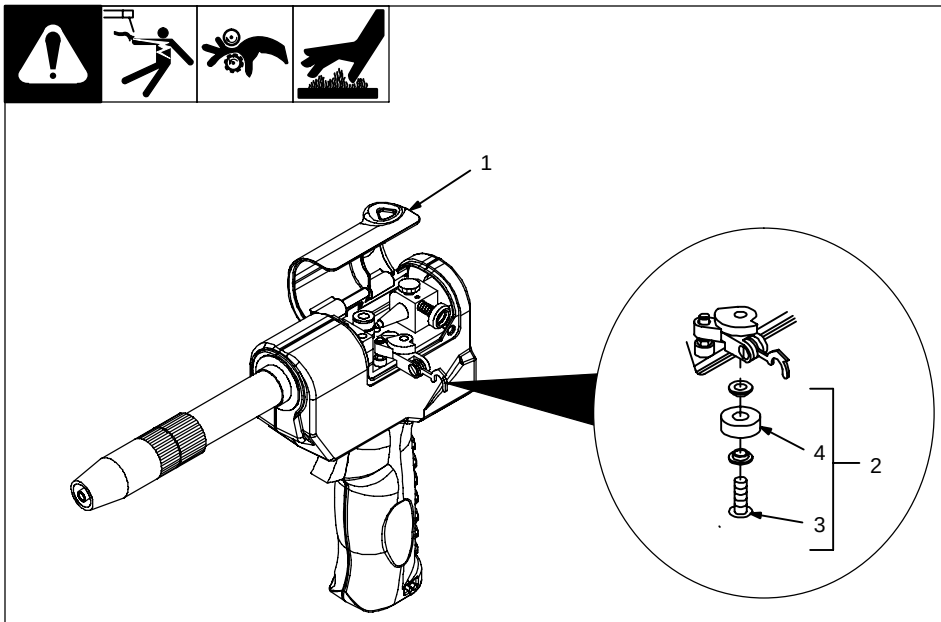
Pull guide toward rear of feeder to remove. Install new guide.

Thread welding wire and adjust drive roll pressure, if necessary (see Section 4-15). Close and secure pressure roll assembly. Close and latch door.

Close gun pressure roll assembly, and reinstall gun cover.

151 778 / Ref. 151 781-B

## 6-4. Replacing Or Cleaning Gun Drive Roll Bearing




Turn Off wire feeder and welding power source.

1 Top Cover

2 Pressure Roll Assembly

3 Screw

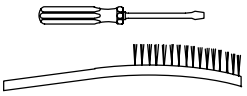
4 Pressure Roll

Remove as shown.

Use a wire brush to clean bearing. Reinstall with washers, and tighten screw.

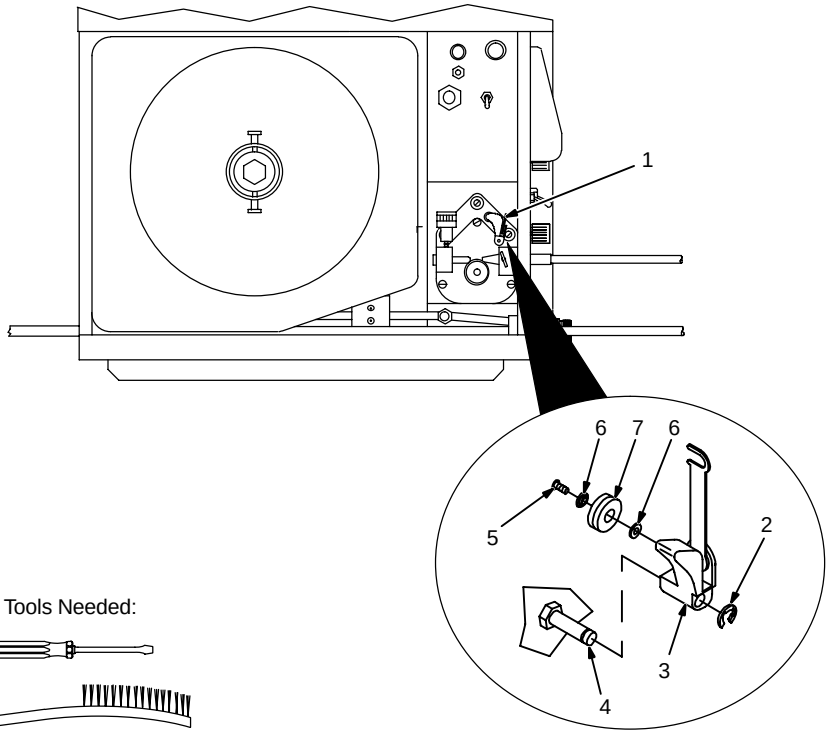
Close pressure roll assembly. Reinstall top cover.

Tools Needed:

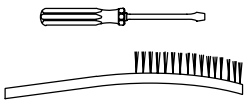


Ref. 151 599−E

## 6-5. Replacing Or Cleaning Feeder Drive Roll Bearing




Tools Needed:



Turn Off wire feeder and welding power source.

1 Pressure Roll Assembly

2 Retaining Ring

3 Mounting Arm

4 Hinge Pin

5 Screw

6 Shoulder Washer

7 Drive Roll Bearing

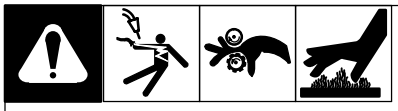
Remove as shown.

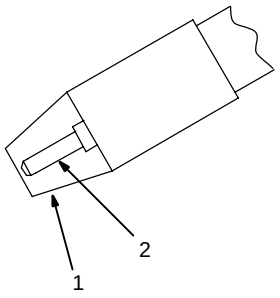
Use a wire brush to clean bearing. Reinstall, and tighten screw.

Close pressure roll assembly. Close and latch door.

151 778 / Ref. 151 781-B

## 6-6. Changing Gun Contact Tip






Remove nozzle

1 Nozzle

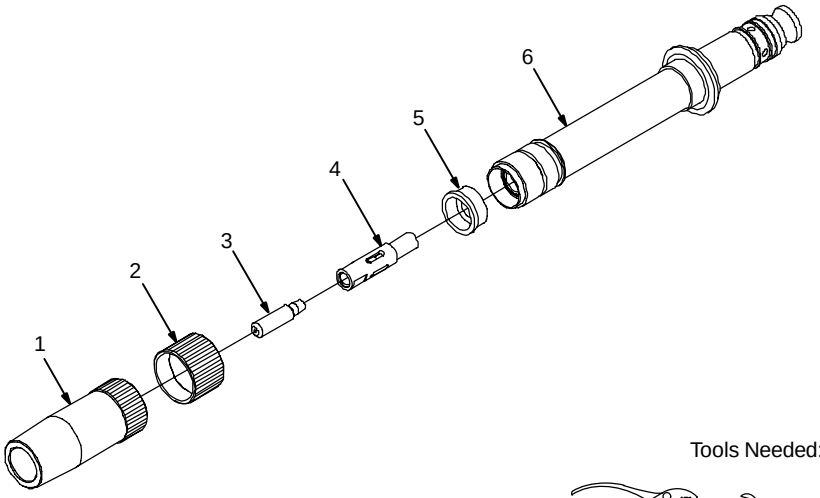
2 FasTip

Unscrew FasTip

Install new FasTip.

Ref. 150 437

## 6-7. Removing Diffuser In Air-Cooled Pistol-Grip Guns




Turn Off wire feeder and welding power source.

1 Nozzle

2 Nozzle Locking Nut

Remove as shown.

3 FasTip

To remove, see Section 6-6.

4 Diffuser

5 Insulator

6 Head Tube

Remove nozzle and FasTip.

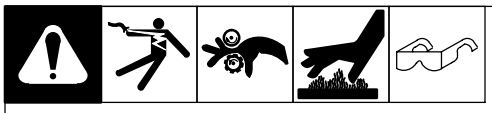
Remove diffuser and replace.

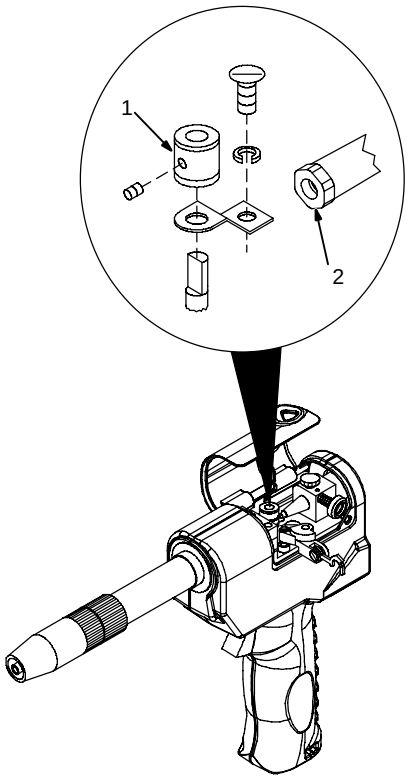
Tools Needed:

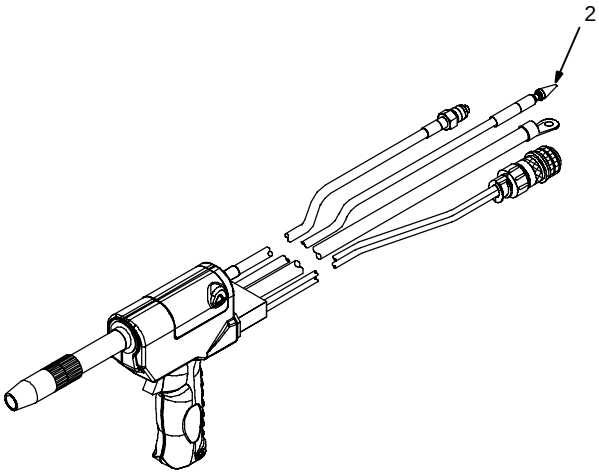
3/8 in

Ref. 800434-C

## 6-8. Replacing The Liner





▲ **Turn Off welding power source and wire feeder.**

1 Drive Roll

2 Collet Nut

Lay gun cable out straight. Remove drive roll on gun and collet nut on on both ends of liner tube assembly and remove old liner.

3 New Liner

Insert split end of new liner into liner tube assembly and continue feeding liner through cable assembly until liner is through liner tube assembly and all of split portion is visible.

☞ *If gun is a 15 ft (4.5 m) model, push the split end of liner through until the opposite end is sticking out of the gun connector 1 to 2 inches (2.5 to 5 cm). After trimming, the section with the split on it can be saved to use as another replacement liner.*

Cut off split portion of liner. Replace front collet nut with new plastic nut from the liner kit. Reinstall steel nut at gun connector and tighten onto liner.

☞ *May be easier to replace the collet nut with the liner conduit removed from the gun housing block.*

The liner end will not stick out of the plastic collet nut supplied with the liner kit.

At the gun connection end, cut liner as close as possible to control (push motor) drive rolls.

Refer to Owner's Manual for instructions on rethreading wire.

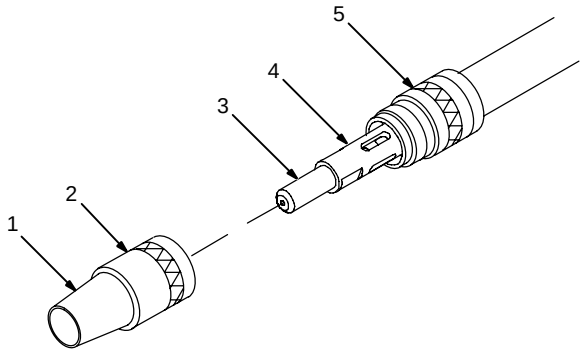
Ref. 151 599-E / Ref. 801 556-B / 801 564−C / Ref. 151 666-D / Ref. 200 371

## 6-9. Removing Diffuser In Water-Cooled Pistol-Grip Guns

**⚠ WARNING**

**WATER IN GUN PARTS can cause ELECTRIC SHOCK and can lower weld quality.**

- Turn Off welding power source and water supply before working on gun. Stop engine on welding generators.
- Always point gun downward when removing water-cooled barrel to keep water out of gun parts.
- Wipe gun dry before putting it back together.




Turn Off weld control and welding power source.

1 Nozzle

2 Nozzle Adaptor

Remove as shown.

3 FasTip

4 Diffuser

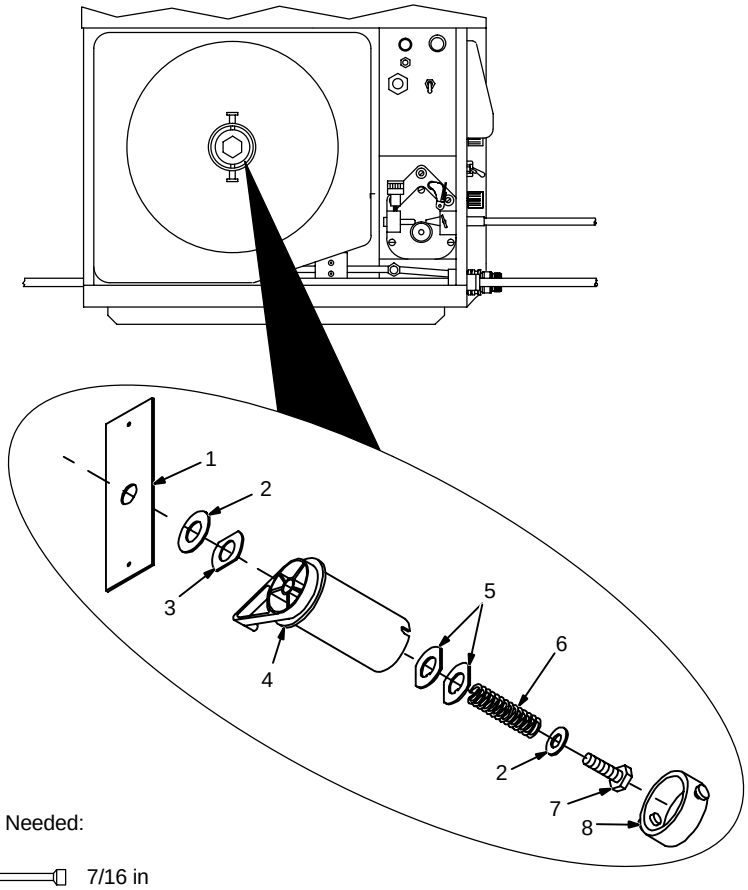
5 Nozzle Locking Nut

Remove nozzle and FasTip.

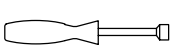
Remove diffuser and replace.

Ref. 150 431 / Ref. 150 431-A

## 6-10. Replacing Hub Assembly




Tools Needed:



7/16 in

Turn Off wire feeder and welding power source. Remove gun top cover and open pressure roll assembly as shown in Section 6-4.

Retract wire onto spool and remove spool. Take hub apart as shown.

1 Metal Brake Washer

2 Flat Washer

3 Brake Washer

4 Hub

5 Keyed Washer

6 Spring

7 Cap Screw

8 Retaining Ring

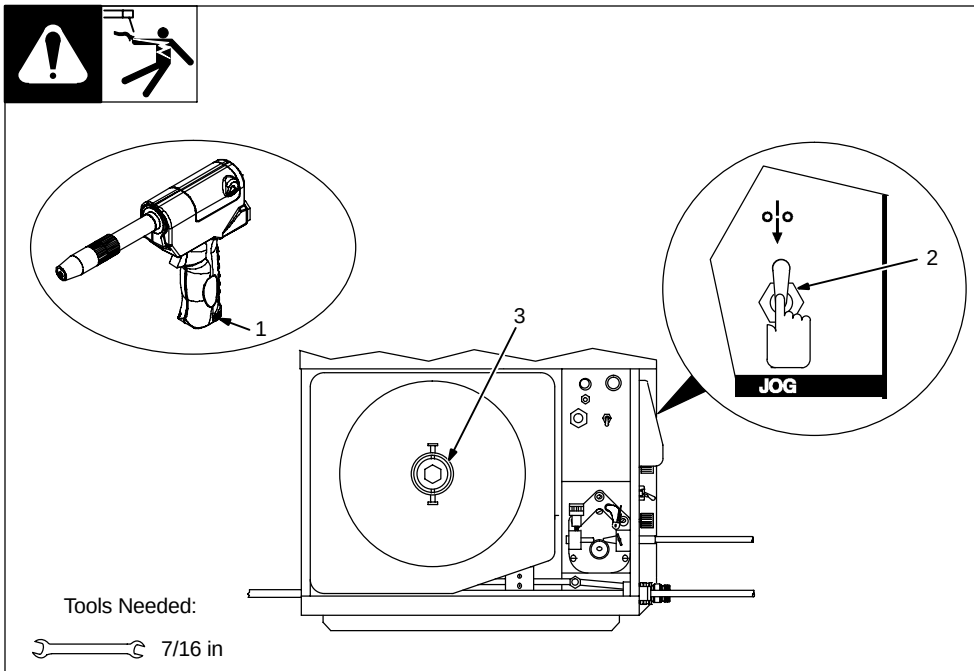
Replace broken or worn parts and slide parts onto shaft as shown.

Adjust hub tension (see Section 6-11). Thread welding wire (see Section 4-15). Close and latch door.

Close gun pressure roll assembly and reinstall gun cover.

151 778-B / Ref. 143 223-A

## 6-11. Adjusting Hub Tension




Tools Needed:

7/16 in

Turn On welding power source and wire feeder to make this adjustment.

1 Wire Speed Control

Adjust control to wire speed for welding.

2 Jog Switch

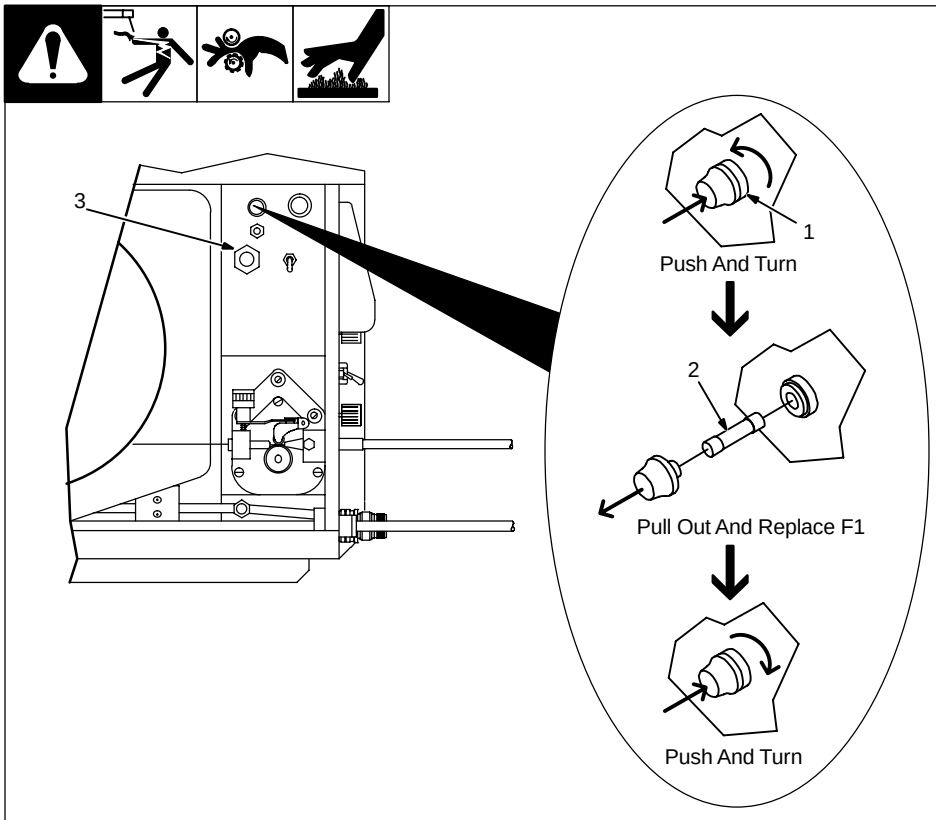
Push up, and then release Jog switch. Hub tension is okay if wire unwinds freely, but wire does not backlash when Jog switch is released.

3 Cap Screw

Turn cap screw to adjust hub tension. Do not overtighten. Turn Off welding power source and wire feeder. Close and latch door.

151 666-D / Ref. 802 536 / Ref. 176 700-A

## 6-12. Overload Protection




Turn Off wire feeder and welding power source.

If F1 opens, the unit shuts down. To check or change F1, proceed as follows:

1 Fuse Holder Cover

2 Fuse F1 (See Parts List For Rating)

Insert new fuse into cover, and install fuse with cover by pressing and turning cover clockwise.

3 Circuit Breaker CB1

If CB1 opens, the gun drive motor and contactor will not operate, but gas flows when trigger is pulled. The gun drive motor operates in the Jog mode with CB1 open.

Check for blocked gun liner.

Check for jammed wire, binding drive gear or misaligned drive rolls in feeder. Correct problem.

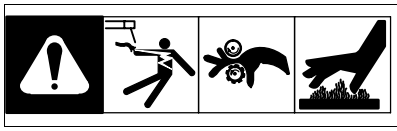
Allow cooling period and manually reset breaker. Close and latch door.

Ref. 151 779-A / Ref. 800 185-A

## 6-13. Water Flow Switch (Optional For Water-Cooled Models)

The water flow switch protects the gun from overheating. If coolant flow rate drops below 1 qt/min, the water flow switch opens and stops the welding wire from feeding. See Section 6-14 for remedies to this trouble.

## 6-14. Troubleshooting

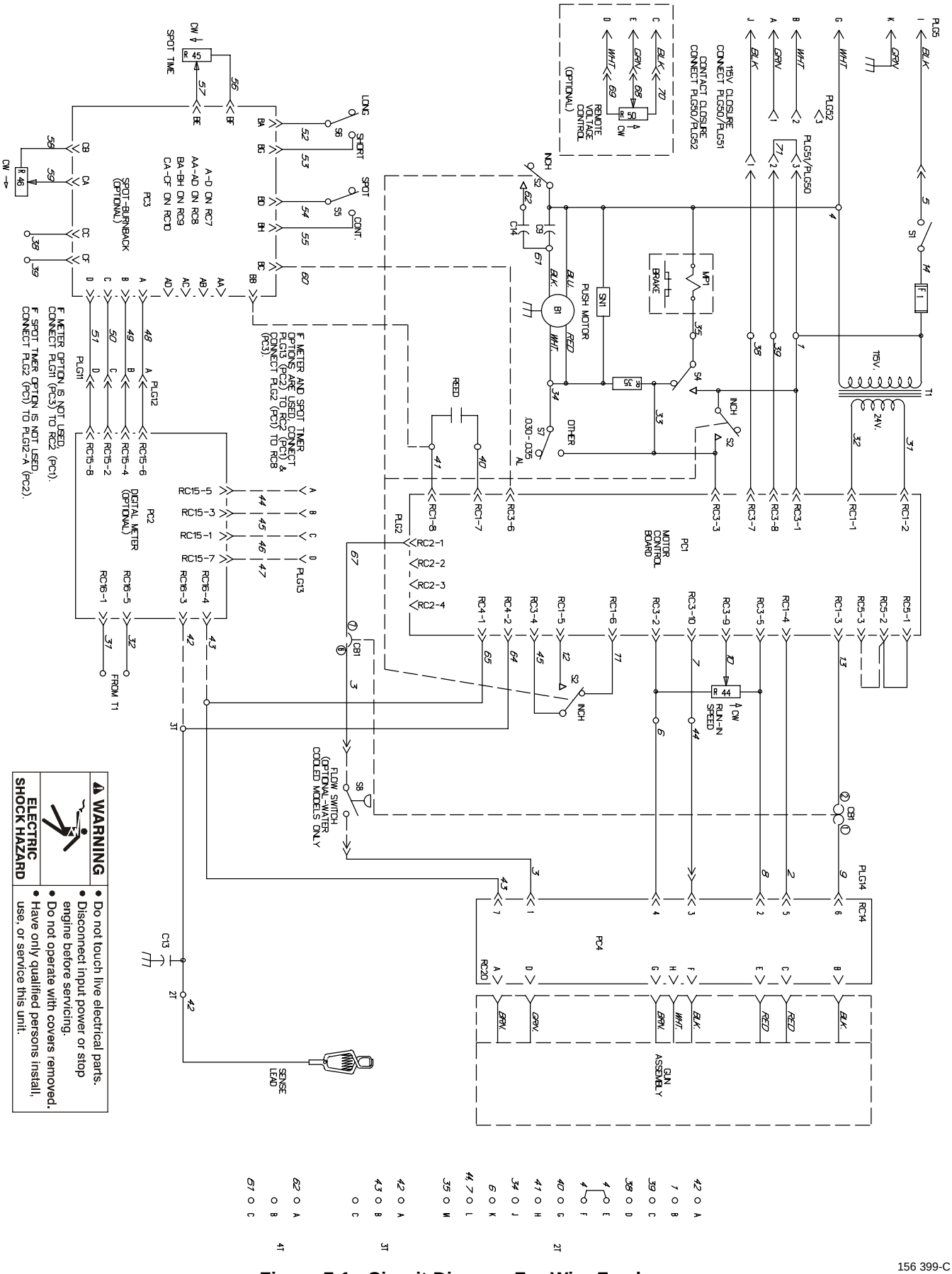


### A. Wire Feeder Trouble

| Trouble | Remedy |
|---|---|
| Pressing gun trigger does not energize feeder. Welding wire is not energized. Shielding gas flows. | Secure plug from gun control cable into Gun Control receptacle on feeder (see Section 4-6). |
| | Secure 115 VAC input plug connection (see Section 4-12). |
| | Check fuse F1 (see Section 6-12). |
| | Check water connection to feeder or gun (see Sections 4-6 and 4-8). |
| | Check for kinks in water hose. |
| | Be sure coolant supply is turned On (see Section 5-14). |
| | Have nearest Factory Authorized Service Station/Service Distributor check optional water flow switch, if applicable (see Section 6-13). |
| Wire feeds, shielding gas flows, but welding wire is not energized. | Secure 115 VAC/contactor control plug connection (see Section 4-12). |
| | See Troubleshooting section in welding power source manual. |
| | Check plug PLG50, PLG51 and PLG52 connections (see Section 4-13). |
| Wire feeds erratically. | Check position of Motor Torque switch (see Section 5-11). |
| | Adjust drive roll pressure if necessary (see Section 4-15). |
| | Replace or clean drive rolls as necessary (see Sections 6-2 and 6-3). |
| | Align drive roll with opening in gun conduit fitting and groove in bearing (see Section 6-3). |
| Arc varies and welding wire is kinked when feeding out gun. | Place Motor Torque switch in low torque position if welding with .030 (0.8 mm) aluminum welding wire (see Section 5-11). |
| Pressing gun trigger will not feed wire, wire is not energized, shielding gas flows, and Jog switch activates motor. | Reset circuit breaker CB1 (see Section 6-12). |
| Feeder feeds wire but remains in run-in mode after arc initiation. | Route weld cable through current sensing relay (see Section 4-8). |
| | If constant current (CC) welding, be sure PLG5 is in EXT. position on PC1, and voltage sensing lead is connected (see Section 4-11). |
| | If constant voltage (CV) welding, be sure PLG5 is in INT. position on PC1, and that voltage sensing lead is not connected (see Section 4-11). |
| Feeder feeds wire, but switches from weld mode to run-in mode while CV welding with voltage sensing lead installed. | Be sure PLG5 is in INT. position on PC1. Disconnect voltage sensing clamp from workpiece (see Section 4-11). |
| Shielding gas leak through gas valve in gun. | Reduce shielding gas pressure at regulator flowmeter. Do not exceed 50 psi (345 kPa). |

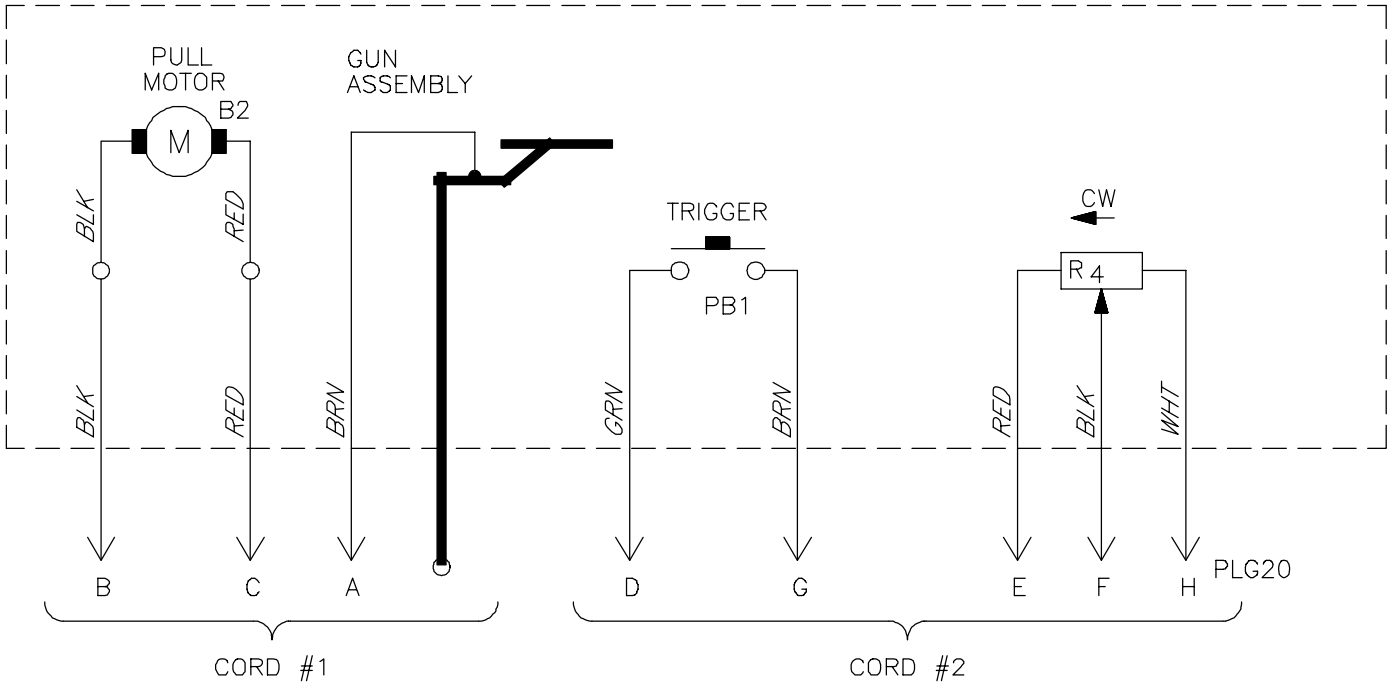
## B. Gun Trouble

| Trouble | Remedy |
|---|---|
| No weld output; gun/feeder does not work. | Secure 115 VAC input plug in 115 volts ac receptacle (see Section 4-12). |
| | Place Power switch on welding power source in the On position. |
| Erratic weld output. | Tighten and clean all connections. |
| Pressing gun/feeder trigger does not energize weld control; welding wire is not energized; shielding gas does not flow. | Secure plug from gun control cable into 10-socket receptacle on wire feeder (see Section 4-6). |
| Wire does not feed; burnback in contact tip. | Reinstall current pick-up tab if applicable (see Section 6-2). |
| Wire feeds, shielding gas flows, but welding wire is not energized. | Clean or replace drive rolls. See Troubleshooting section in welding power source Owner's Manual (see Sections 6-2 and 6-3). |
| Wire feeds erratically. | Check and correct drive roll pressure (see Section 4-15). |
| | Clean drive roll or replace drive roll (see Sections 6-2 and 6-3). |
| Gun overheating (water-cooled models). | Be sure coolant flowrate is at least 1 qt/min (0.95 L/min). |
| | Corrosion buildup in gun decreasing coolant flowrate. Backflush coolant system, clean coolant system filter, and clean fittings (see Section 4-17). |




156 399-C

**Figure 7-1. Circuit Diagram For Wire Feeder**



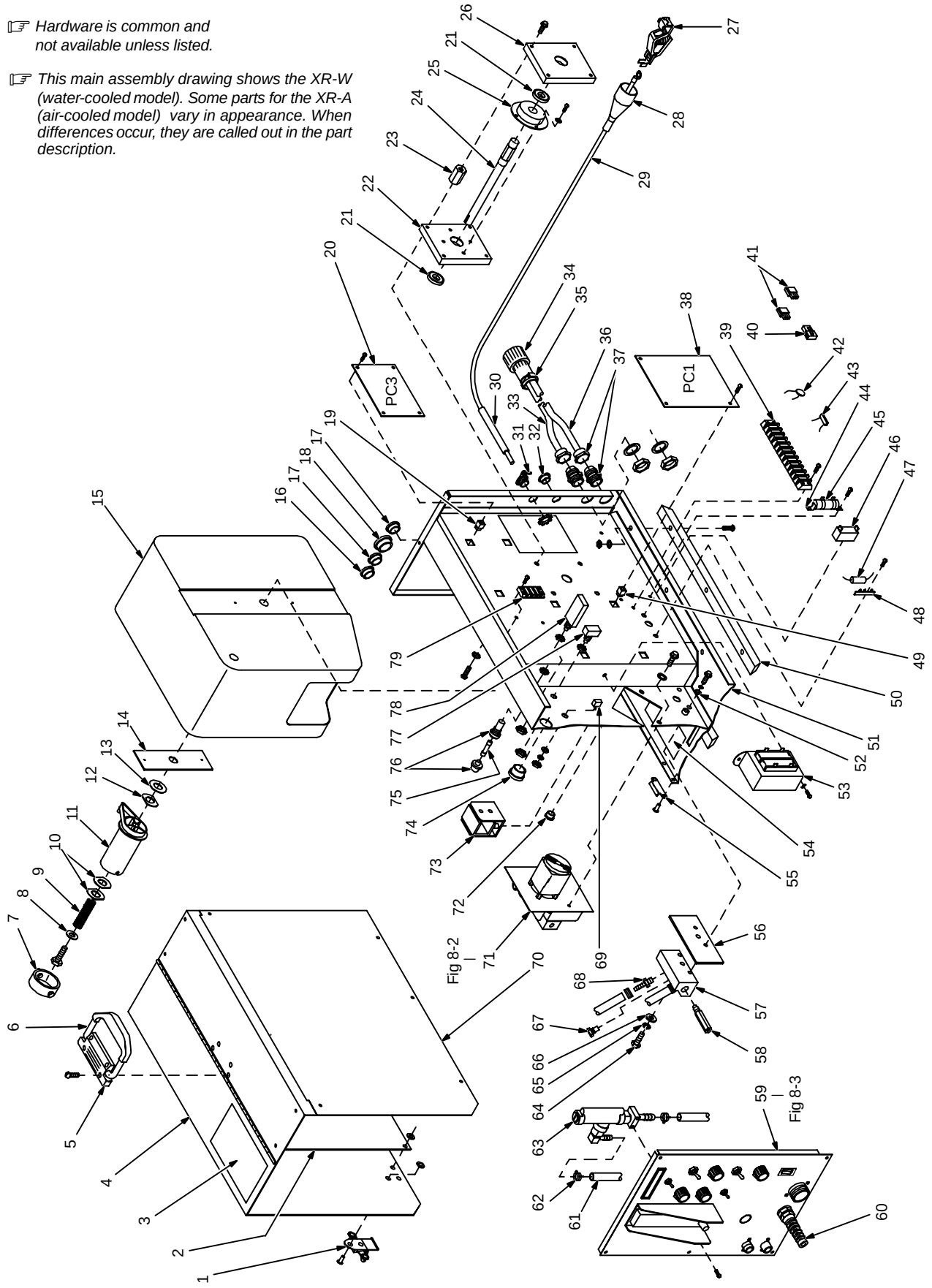

| ⚠ WARNING | • Do not touch live electrical parts.<br>• Disconnect input power or stop engine before servicing.<br>• Do not operate with covers removed.<br>• Have only qualified persons install, use, or service this unit. |
|---|---|
| ELECTRIC SHOCK HAZARD | |

**Figure 7-2. Circuit Diagram For Gun**

# Notes

☞ *Hardware is common and not available unless listed.*

☞ *This main assembly drawing shows the XR-W (water-cooled model). Some parts for the XR-A (air-cooled model) vary in appearance. When differences occur, they are called out in the part description.*




143 223-D

**Figure 8-1. Main Assembly**

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity |
|---|---|---|---|---|

**Figure 8-1. Main Assembly**

| | | | | |
|---|---|---|---|---|
| 1 | | 089 572 | CATCH, link-lock | 2 |
| 2 | | 112 167 | INSULATOR, door | 1 |
| 3 | | 134 327 | LABEL, warning general precautionary | 1 |
| 4 | | +113 569 | WRAPPER | 1 |
| 5 | | 126 415 | CLAMP, saddle | 1 |
| 6 | | 126 416 | HANDLE, molded | 1 |
| 7 | | 058 427 | RING, retaining spool | 1 |
| 8 | | 602 233 | WASHER, flat stl .250 ID x .875 OD x .062thk | 1 |
| 9 | | 057 543 | SPRING, cprsn .845 OD x .091 wire x 1.500 | 1 |
| 10 | | 113 168 | WASHER, locking | 2 |
| 11 | | 058 428 | HUB, spool | 1 |
| 12 | | 089 561 | WASHER, anti-turn stl | 1 |
| 13 | | 058 424 | WASHER, fbr brake | 1 |
| 14 | | 151 697 | STRIP, brake surface anti-turn | 1 |
| 15 | | 112 198 | SHROUD, spool wire 12 in | 1 |
| 16 | | 030 170 | BUSHING, snap-in nyl .750 ID x 1.000mtg hole | 1 |
| 17 | | 057 357 | BUSHING, snap-in nyl .937 ID x 1.125mtg hole (water-cooled model) | 2 |
| 17 | | 057 357 | BUSHING, snap-in nyl .937 ID x 1.125mtg hole (air-cooled model) | 1 |
| 17 | | 070 371 | BLANK, snap-in nyl 1.093/1.125mtg hole (air-cooled model) | 1 |
| 18 | | 057 358 | BUSHING, snap-in nyl 1.000 ID x 1.375mtg hole | 1 |
| 19 | | ♦134 201 | STAND-OFF, PC card | 4 |
| 20 | PC3 | ♦114 538 | CIRCUIT CARD, spot-burnback | 1 |
| | PLG7,8,11 | ♦115 094 | HOUSING PLUG & SOCKETS | 3 |
| | PLG9 | ♦115 092 | HOUSING PLUG & SOCKETS | 1 |
| | PLG10 | ♦115 093 | HOUSING PLUG & SOCKETS | 1 |
| 21 | | 073 302 | BEARING, ball rdl sgl row .669 x 1.378 x .39 | 2 |
| 22 | | 113 161 | BLOCK, bearing front | 1 |
| 23 | | 113 165 | STAND-OFF, .250-20 x 1.000 lg | 4 |
| 24 | | 120 396 | SHAFT, spool | 1 |
| 25 | MP1 | 113 899 | BRAKE, w/terminals | 1 |
| 26 | | 113 900 | BLOCK, bearing rear | 1 |
| 27 | | 601 228 | CLAMP, univ 25A | 1 |
| 28 | | 601 226 | INSULATOR, vinyl clamp univ 25A | 1 |
| 29 | | 600 848 | WIRE, lead mot 12ga strd (order by ft) | 35ft |
| 30 | | 176 089 | TUBING, plstc PVC black | 1ft |
| 31 | | 115 104 | CONNECTOR, clamp cable .500 | 1 |
| 32 | | 000 527 | BLANK, snap-in nyl .875mtg hole | 1 |
| 33 | | 007 826 | CABLE, port No. 18 3/c (order by ft) | 11ft |
| 34 | PLG5 | 141 162 | HOUSING PLUG & PINS | 1 |
| 35 | | 079 739 | CLAMP, cable strain relief | 1 |
| 36 | | 007 826 | CABLE, port No 18 3/c (order by ft) | 11ft |
| 36 | | ♦♦007 826 | CABLE, port No. 18 3/c (order by ft) | 11ft |
| 37 | | 139 042 | BUSHING, strain relief .270/.480 ID x .804mtg hole | 2 |
| 37 | | ♦♦139 042 | BUSHING, strain relief .270/.480 ID x .804mtg hole | 1 |
| 38 | PC1 | 142 053 | CIRCUIT CARD, motor speed control | 1 |
| | PLG1 | 115 092 | HOUSING PLUG & SOCKETS | 1 |
| | PLG2 | 115 094 | HOUSING PLUG & SOCKETS | 1 |
| | PLG3 | 115 091 | HOUSING PLUG & SOCKETS | 1 |
| | PLG4 | 131 054 | HOUSING RECEPTACLE & SOCKETS | 1 |
| 39 | 2T | 038 783 | BLOCK, term 20A 12P | 1 |
| 40 | PLG50 | 131 203 | HOUSING PLUG & PINS | 1 |
| 41 | PLG51,52 | 131 204 | HOUSING PLUG & SOCKETS | 2 |
| 42 | C13 | 117 500 | CAPACITOR | 1 |
| 43 | SN1 | 110 079 | SNUBBER, polye MF .5uf 200VDC | 1 |
| 44 | | 605 741 | CLIP, mtg resistor .312 ID core | 2 |
| 45 | R35 | 030 087 | RESISTOR, WW fxd 25W 200 ohm | 1 |
| 46 | C9 | 114 215 | CAPACITOR, polye film 2.3uf 250VAC | 1 |
| 47 | C14 | 044 602 | CAPACITOR, polye film .47uf 400VDC | 1 |
| 48 | 4T | 038 785 | STRIP, term 3P | 1 |
| 49 | | 134 201 | STAND-OFF SUPPORT, PC card | 4 |

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity |
|---|---|---|---|---|

**Figure 8-1. Main Assembly (Continued)**

| | | | | |
|---|---|---|---|---|
| 50 | | 111 152 | SKID, base | 2 |
| 51 | | +176 714 | CABINET, control | 1 |
| | | 153 901 | LABEL, caution the recommended coolant to be | 1 |
| 52 | | 605 970 | WASHER, shldr nyl .310 OD x .252 ID x .064 (water-cooled model) | 4 |
| 52 | | 605 970 | WASHER, shldr nyl .310 OD x .252 ID x .064 (air-cooled model) | 3 |
| 53 | T1 | 090 465 | TRANSFORMER, signal 115V 24VCT 4A | 1 |
| 54 | | 090 439 | LABEL, warning electric shock can kill | 1 |
| 55 | | 089 573 | PLATE, keeper link-lock | 2 |
| 56 | | 131 318 | INSULATOR, block connection (water-cooled model) | 1 |
| 56 | | 113 166 | INSULATOR, term (air-cooled model) | 1 |
| 57 | | 131 311 | BLOCK, connection | 1 |
| 58 | | 150 067 | FITTING, water block extension | 1 |
| 59 | | Fig 8-3 | PANEL, front w/components | 1 |
| 60 | | 121 276 | BUSHING, strain relief .709 ID x 1.115mtg hole | 1 |
| 61 | ♦♦♦ | 134 834 | HOSE, SAE .187 ID X .410 OD (order by ft) | 2ft |
| 62 | ♦♦♦ | 089 120 | CLAMP, hose .375-.450clp dia slfttng | 4 |
| 63 | S8 | ♦♦♦ 164 963 | SWITCH, flow w/fittings | 1 |
| 64 | | 601966 | SCREW, cap stl hexhd .375-16 x 1.250 (water-cooled model) | 1 |
| 64 | | 117 498 | TERMINAL, pwr weld (air-cooled model) | 1 |
| | | 117 496 | WASHER, fbr .312 ID x .750 OD x .062thk (air-cooled model) | 2 |
| | | 075 150 | WASHER, shldr nyl 1.000 OD x .375 ID (air-cooled model) | 1 |
| | | 010 910 | WASHER, flat stl SAE .375 (air-cooled model) | 2 |
| | | 601 872 | NUT, stl hex full .375-16 | 2 |
| 65 | | 602 213 | WASHER, lock stl split .375 | 1 |
| 66 | | 602 243 | WASHER, flat stl std .375 | 1 |
| 67 | | 151 663 | FITTING, plug water block | 1 |
| 67 | | 151 664 | FITTING, diverter water block | 1 |
| 68 | ♦♦♦ | 151 662 | FITTING, pipe brs plug hex .125NPT | 2 |
| 68 | ♦♦♦ | 073 432 | FITTING, brs barbed M 3/16tbg x 1/8NPT | 2 |
| 69 | S7 | 011 770 | SWITCH, tgl SPDT 5A 125V | 1 |
| 70 | | 113 565 | DOOR, RH | 1 |
| 71 | | Fig 8-2 | MOTOR & WIRE DRIVE | 1 |
| 72 | | 010 546 | BUSHING, snap-in nyl .375 ID x .500mtg hole | 1 |
| 73 | REED | 140 786 | SWITCH, reed | 1 |
| 74 | | 010 493 | BUSHING, snap-in nyl .625 ID x .875mtg hole | 1 |
| 75 | F1 | *012 663 | FUSE, mintr gl slo-blo 3A | 1 |
| 76 | | 046 432 | HOLDER, fuse mintr .250 x 1.250 panel mtg | 1 |
| 77 | S4 | 011 232 | SWITCH, PB SPDT | 1 |
| 78 | CB1 | 174 092 | CIRCUIT BREAKER, man reset 1P .7A 250VAC | 1 |
| 79 | 3T | 038 861 | BLOCK, term 20A 3P | 1 |
| | | 601 219 | LINK, jumper term blk 20A | 1 |
| 80 | | 211 989 | FITTING, w/screen | 1 |

+When ordering a component originally displaying a precautionary label, the label should also be ordered.

♦Part of Spot Weld Control Option

♦♦Part of Voltage Control Option

♦♦♦Part of Water Flow Shutdown Switch Option

*Recommended Spare Parts.

**To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.**

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity |
|---|---|---|---|---|

**Figure 8-2. Motor & Wire Drive (Fig 8-1 Item 71)**

| | | | | |
|---|---|---|---|---|
| 1 | | 115 191 | DRIVE ASSEMBLY, wire (consisting of) | 1 |
| 2 | | 058 968 | RING, retainer E | 1 |
| 3 | | 605 798 | WASHER, shldr nyl .375 OD x .168 ID x .080thk | 4 |
| 4 | | 120 395 | SPRING, tension pressure roll | 1 |
| 5 | | 112 713 | ARM, pressure roll | 1 |
| 6 | | 058 409 | BEARING | 1 |
| 7 | | 112 887 | PIN, hinge | 1 |
| 8 | | 057 544 | SPRING, cprsn .240 OD x .026 wire x 1.000 | 1 |
| 9 | | 120 397 | NUT, thumb tension adjustment | 1 |
| 10 | | 147 626 | COVER, gear wire drive | 1 |
| 11 | | 058 549 | GUIDE, wire inlet 1/16 | 1 |
| 12 | | 602 306 | PIN, spring CS .125 x .500 | 2 |
| 13 | | 008 667 | BEARING, ball rdl dbl row .250 x .687 x .31 | 2 |
| 14 | | 113 170 | GEAR & SHAFT, motor | 1 |
| 15 | | 147 624 | CASE, gear wire drive | 1 |
| 16 | | 147 625 | BLOCK, anchor conduit | 1 |
| 17 | | 054 263 | SCREW, thumb stl .250-20 x .500 | 1 |
| 18 | | 120 398 | ROLL, drive V groove .030-1/16 wire (consisting of) | 1 |
| 19 | | 602 169 | SCREW, set stl sch 8-32 x .187 cup point | 2 |
| 20 | | 605 971 | WASHER, shldr nyl .236 OD x .195 ID x .042thk | 3 |
| 21 | | 113 162 | INSULATOR, motor | 1 |
| 22 | B1 | 113 898 | MOTOR, torque 115VAC | 1 |
| 23 | | 113 169 | GEAR, driver | 1 |
| 24 | | 604 612 | SCREW, set stl sch 8-32 x .125 cup point | 2 |

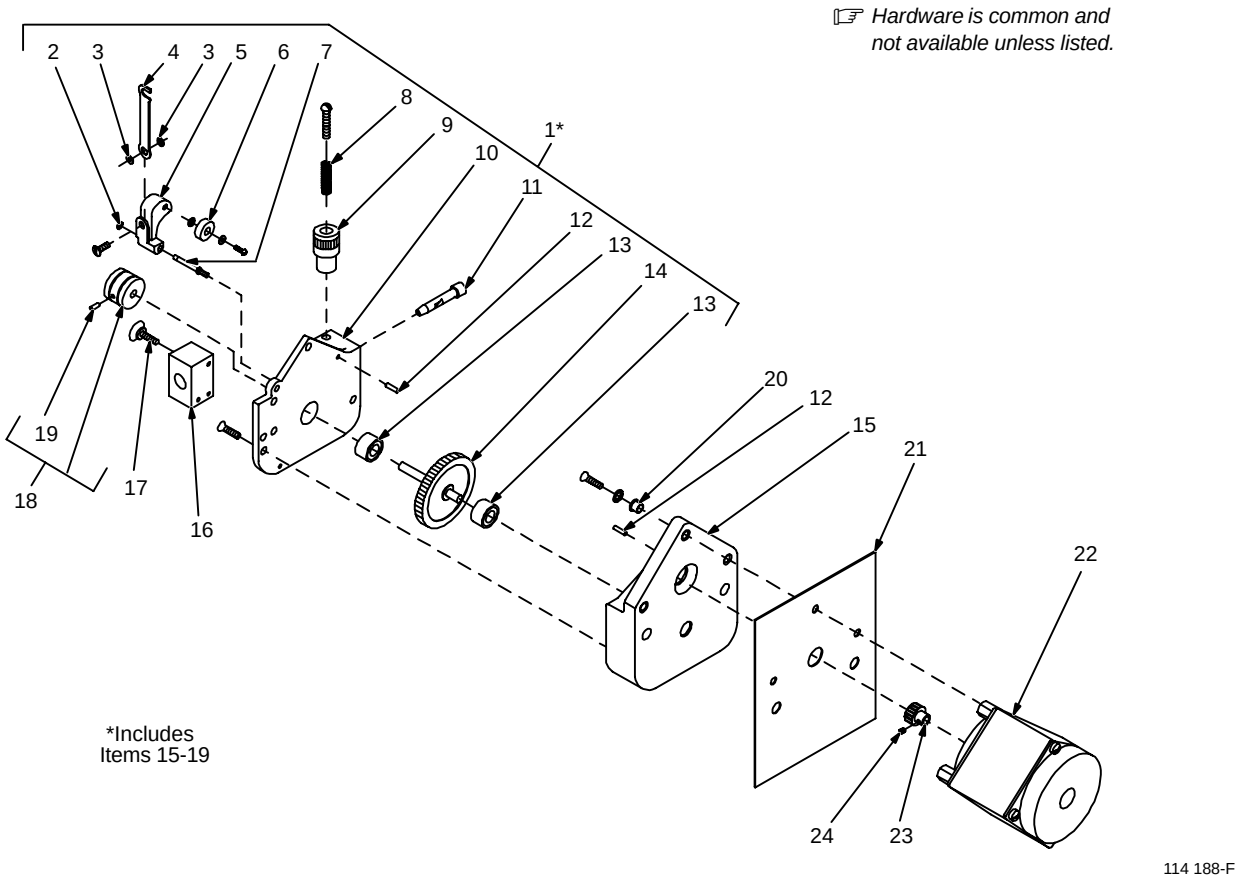



**Figure 8-2. Motor & Wire Drive**

**To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.**

☞ *Hardware is common and not available unless listed.*

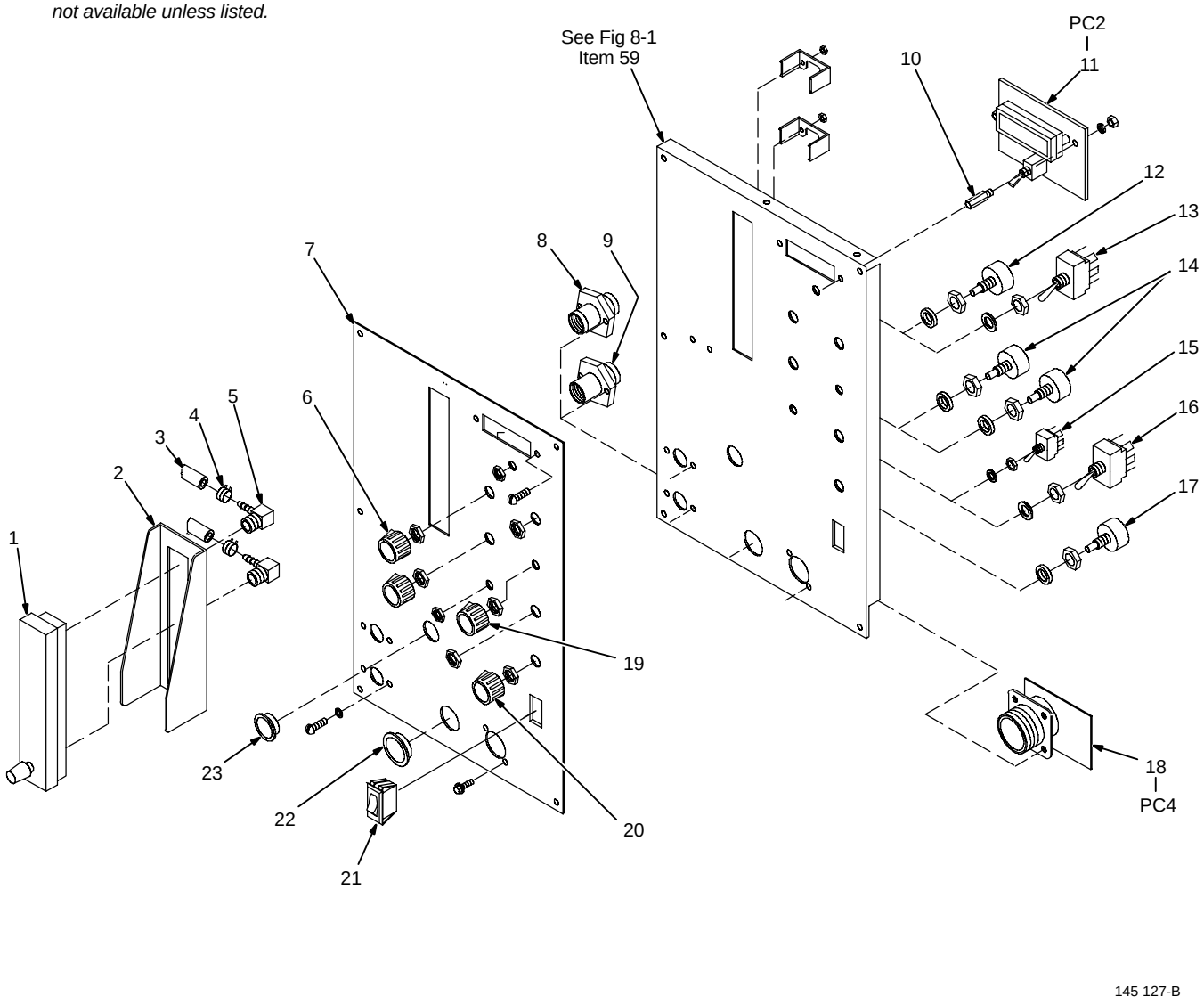


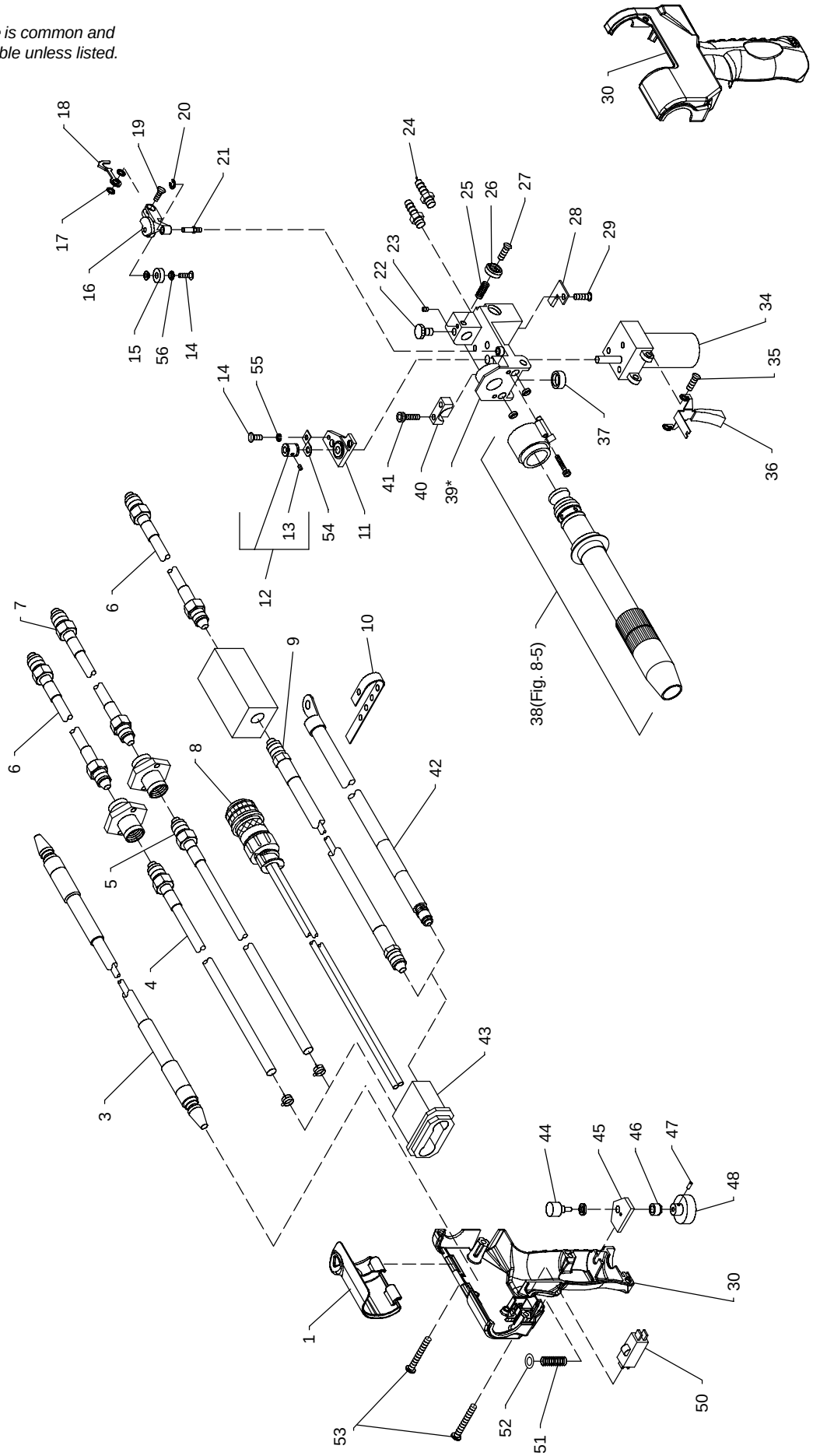

**Figure 8-3. Panel, Front w/Components (Water-Cooled Model Illustrated)**

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity |
|---|---|---|---|---|
| | | | **Figure 8-3. Panel, Front w/Components (Fig 8-1 Item 59)** | |
| 1 | | ♦111 569 | METER, flow 6-60 | 1 |
| 2 | | ♦111 633 | GUARD, flow meter | 1 |
| 3 | | ♦134 834 | HOSE, SAE .187 ID x .410 OD (order by ft) | 4ft |
| | | ♦056 851 | FITTING, hose brs barbed nipple 3/16tbg | 2 |
| | | ♦010 606 | FITTING, hose brs nut .625-18 | 2 |
| | | ♦056 108 | FITTING, hose brs ferrule .425 ID x .718 lg | 2 |
| | | ♦045 852 | CLIP, component .687dia mtg adh back | 1 |
| 4 | | ♦089 120 | CLAMP, hose .375-.450clp dia | 2 |
| 5 | | ♦112 090 | FITTING, pipe brs elb 1/8NPT x 3/16 hose | 2 |
| 6 | | 097 922 | KNOB, pointer | 1 |
| 7 | | | NAMEPLATE, (order by model and serial number) | 1 |
| 8 | | 139 678 | FITTING, water (water-cooled model) | 1 |
| 8 | | 000 527 | BLANK, snap-in nyl .875mtg hole (air-cooled model) | 1 |
| 9 | | 000 434 | FITTING, gas | 1 |
| 10 | | ♦♦115 443 | STAND-OFF, No. 6-32 x .750 lg | 2 |
| 11 | PC2 | ♦♦139 897 | CIRCUIT CARD, meter | 1 |
| | PLG12 | ♦♦115 090 | HOUSING PLUG & PINS | 1 |
| | PLG13 | ♦♦115 094 | HOUSING RECEPTACLE & SOCKETS | 1 |
| | PLG15 | ♦♦115 092 | HOUSING PLUG & SOCKETS | 1 |
| | PLG16 | ♦♦131 055 | HOUSING RECEPTACLE & SOCKETS | 1 |
| | | 136 339 | COVER, opening meter | 1 |
| | | 120 304 | BLANK, snap-in nyl .250mtg hole | 1 |
| 12 | R44 | 073 562 | POTENTIOMETER, C sltd sft 1/T 2W 10K ohm | 1 |
| 13 | S2 | 120 400 | SWITCH, tgl 3PDT MC 15A 125VAC | 1 |
| 14 | R45,46 | ♦♦♦028 770 | POTENTIOMETER, C sltd sft 1/T 2W 1 meg ohm | 2 |
| 15 | S6 | ♦♦♦011 770 | SWITCH, tgl SPDT 5A 125V | 1 |
| 16 | S5 | ♦♦♦011 609 | SWITCH, tgl SPDT 15A 125VAC | 1 |
| 17 | R50 | ♦♦♦♦035 897 | POTENTIOMETER, C sltd sft 1/T 2W 1000 ohm | 1 |
| 18 | PC4, RC20 | 139 508 | CIRCUIT CARD, filter | 1 |
| | | 146 212 | PLUG, 10 pin MS-3106A-18-1PX Amphenol | |
| | PLG14 | 115 092 | HOUSING PLUG & SOCKETS | 1 |
| 19 | | ♦♦♦097 922 | KNOB, pointer | 2 |
| 20 | | ♦♦♦♦097 922 | KNOB, pointer | 1 |
| 21 | S1 | 111 997 | SWITCH, rocker SPST 10A 250VAC | 1 |
| 22 | | 057 357 | BUSHING, snap-in nyl .937 ID x 1.125mtg hole (water-cooled model) | 1 |
| 22 | | 070 371 | BLANK, snap-in nyl 1.093/1.125mtg hole (air-cooled model) | 1 |
| 23 | | 030 170 | BUSHING, snap-in nyl .750 ID x 1.000mtg hole | 1 |

♦Part of Gas Flow Meter Option.
♦♦Part of Meter Kit Option.
♦♦♦Part of Spot Weld Control Option.
♦♦♦♦Part of Voltage Control Option.

**To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.**

☞ *Hardware is common and not available unless listed.*




803 706-A

**Figure 8-4. Exploded View Of Gun**

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity |
|---|---|---|---|---|

**Figure 8-4. Exploded View Of Gun**

| | | | | |
|---|---|---|---|---|
| .. 1 | | 214 745 | .. COVER | 1 |
| .. 2 | | Deleted | | |
| .. 3 | | 194 405 | .. CONDUIT w/FITTING, 15ft (15A & W models) | 1 |
| | | 204 422 | .... CONDUIT W/FITTING, molded 15 ft | 1 |
| | | 220 879 | .... TUBING, nyl .120 id x .175−.180 od xroll | 16ft |
| | | 216 001 | .... NUT, liner collet retaining | 1 |
| | | 185 106 | .... NUT, liner collet | 1 |
| .. 3 | | 194 410 | .. CONDUIT w/FITTING, 30ft (30A & W models) | 1 |
| | | 204 425 | .... CONDUIT W/FITTING, molded 30 ft | 1 |
| | | 220 879 | .... TUBING, nyl .120 id x .175−.180 od xroll | 32ft |
| | | 216 001 | .... NUT, liner collet retaining | 1 |
| | | 185 106 | .... NUT, liner collet | 1 |
| .. 4 | | 137 474 | .. HOSE, water in (15W model) (consisting of) | 1 |
| .. 4 | | 137 475 | .. HOSE, water in (30W model) (consisting of) | 1 |
| .. 5 | | 137 473 | .. HOSE, gas in (15A & W models) (consisting of) | 1 |
| .. 5 | | 137 472 | .. HOSE, gas in (30A & W models) (consisting of) | 1 |
| | | 056 851 | .... FITTING, hose brs barbed nipple 3/16tbg | 1 |
| | | 010 607 | .... FITTING, hose brs nut .625-18 LH (water hose) | 1 |
| | | 010 606 | .... FITTING, hose brs nut .625-18RH (gas hose) | 1 |
| | | 056 108 | .... FITTING, hose brs ferrule .425 ID x .718 lg | 1 |
| | | 134 834 | .... HOSE, SAE .187 ID x .410 OD (15A & W models) (order by ft) | 16ft |
| | | 134 834 | .... HOSE, SAE .187 ID x .410 OD (30A & W models) (order by ft) | 31ft |
| | | 089 120 | .... CLAMP, hose .375-.450clp dia slfttng | 1 |
| .. 6 | | 000 571 | .. HOSE, water (XR-15 & 30W models) (consisting of) | 2 |
| | | 056 851 | .... FITTING, hose brs barbed nipple 3/16tbg | 2 |
| | | 010 607 | .... FITTING, hose brs nut .625-18 LH | 2 |
| | | 056 108 | .... FITTING, hose brs ferrule .425 ID x .718 lg | 2 |
| | | 134 834 | .... HOSE, SAE .187 ID x .410 OD (order by ft) | 10ft |
| .. 7 | | 048 837 | .. HOSE, gas (consisting of) | 1 |
| | | 010 603 | .... FITTING, hose brs barbed nipple 1/4tbg | 2 |
| | | 010 606 | .... FITTING, hose brs nut .625-18RH | 2 |
| | | 056 112 | .... FITTING, hose brs ferrule .475 ID x .718 lg | 2 |
| | | 603 106 | .... HOSE, nprn brd No. 1 x .250 ID (order by ft) | 10ft |
| .. 8 | | 198 891 | .. CABLE, control 15 ft (15A & W models) | 1 |
| .. 8 | | 198 810 | .. CABLE, control 30 ft (30A & W models) | 1 |
| .. 9 | | 137 476 | .. CABLE, power/water out 15ft (15W model) | 1 |
| .. 9 | | 137 477 | .. CABLE, power/water out 30ft (30W model) | 1 |
| .. 10 | | 073 476 | .. CLAMP, strap rbr 5 holes .375 wide x 4.625 lg (15A & W models) | 6 |
| .. 10 | | 073 476 | .. CLAMP, strap rbr 5 holes .375 wide x 4.625 lg (30A & W models) | 13 |
| .. 11 | | 162 041 | .. BEARING BLOCK ASSEMBLY | 1 |
| | | 604 638 | .. SCREW, cap stl sch 6-32 x .375 | 3 |
| | | 143 480 | .. SCREW, 6-32 x .625 soc hd-hex stl | 1 |
| .. 12 | | 136 135 | .. ROLL, drive VK groove .023-1/16 wire (consisting of) | 1 |
| .. 13 | | 604 612 | .... SCREW, set stl sch 8-32 x .125 cup point | 2 |
| .. 14 | | 114 045 | .. SCREW, 6-32 x .500 hexwhd slt stl slffmg | 3 |
| .. 15 | | 134 623 | .. BEARING, idler roll | 1 |
| .. 16 | | 132 852 | .. ARM, pressure | 1 |
| .. 17 | | 605 798 | .. WASHER, shldr nyl .375 OD x .168 ID x .080 | 2 |
| .. 18 | | 133 083 | .. SPRING, tension adj drive roll | 1 |
| .. 19 | | 144 860 | .. SCREW, mach stl flh 8-32 x .437 | 1 |
| .. 20 | | 058 968 | .. RING, retainer E | 1 |
| .. 21 | | 135 474 | .. PIN, hinge | 1 |
| .. 22 | | 155 565 | .. SCREW, thumb | 1 |
| | | 134 799 | .. O-RING, .176 ID x .070 CS (used w/thumbscrew) | 1 |
| .. 23 | | 135 126 | .. SCREW, set stl sch 6-32 x .125 cup point | 1 |
| .. 24 | | 135 580 | .. FITTING, gas | 1 |
| .. 25 | | 112 896 | .. SPRING, cprsn .240 OD x .020 wire x .437 | 1 |
| .. 26 | | 135 773 | .. KNOB, thumb tension adjusting 8-32 | 1 |

| Item No. | Dia. Mkgs. | Part No. | Description | Quantity |
|---|---|---|---|---|

**Figure 8-4. Exploded View Of Gun (Continued)**

| | | | | |
|---|---|---|---|---|
| 27 | | 143 360 | SCREW, mach stl rdh 8-32 x .500 | 1 |
| 28 | | 136 679 | CLAMP, strain relief | 1 |
| 29 | | 132 269 | SCREW, mach stl rdhph 8-32 x .375 | 1 |
| 30 | | 214 743 | CASE, gun lh/rh (molded halves) | 1 |
| 31 | | Deleted | | |
| 32 | | Deleted | | |
| 33 | | Deleted | | |
| 34 | B2 | 161 813 | MOTOR, gear PM 24VDC 420RPM 10.2:1 ratio | 1 |
| 35 | | 602 066 | SCREW, mach stl trh 6-32 x .250 | 2 |
| 36 | | 164 592 | TRIGGER | 1 |
| 37 | | 058 262 | CAP, valve | 1 |
| 38 | | Fig 8-5 | BARREL ASSEMBLY | 1 |
| 39 | | 164 582 | HOUSING, wire drive (15A & 30A models) (includes items 24 & 37) | 1 |
| 39 | | 164 581 | HOUSING, wire drive (15W & 30W models) (includes items 24 & 37) | 1 |
| | | 151 661 | SCREW, set 10-32 x .125 cup sch (30W models only) | 2 |
| 40 | | 133 365 | CLAMP, head tube | 1 |
| 41 | | 000 417 | SCREW, cap stl sch 10-24 x 1.000 | 2 |
| 42 | | 203 758 | CABLE, power (15A model) (consisting of) | 1 |
| 42 | | 203 759 | CABLE, power (30A model) (consisting of) | 1 |
| 43 | | 133 362 | STRAIN RELIEF, cable | 1 |
| 44 | R4 | 200 096 | POTENTIOMETER, C sltd sft 1/T .5W 10K ohm | 1 |
| 45 | | 144 861 | WASHER, anti-turn | 1 |
| 46 | | 135 127 | LOCK, shaft pot .250-32 x .125dia shaft | 1 |
| 47 | | 602 169 | SCREW, set stl sch 8-32 x .187 | 1 |
| 48 | | 134 856 | KNOB, speed control 1-10 .140 shaft x 1.125 OD | 1 |
| 49 | | Deleted | | |
| 50 | PB1 | 000 369 | SWITCH, lim 10A 125/250VAC DPST plgr | 1 |
| 51 | | 183 884 | SPRING, cprsn .240 OD x .026 wire x 1.000 | 1 |
| 52 | | 184 101 | WASHER, shldr .140 ID x .250 OD | 1 |
| 53 | | 217 934 | SCREW, K40x 20 pan hd-trx stl pld pt thread forming | 4 |
| 54 | | 162 042 | CONTACT, current pick-up | 1 |
| 55 | | 602 198 | WASHER, lock .141 ID stl split | 4 |
| 56 | | 134 624 | BEARING, flg nyl .140 ID x .187 OD x .375flg x .031thk | 2 |

**To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.**

☞ *Hardware is common and not available unless listed.*

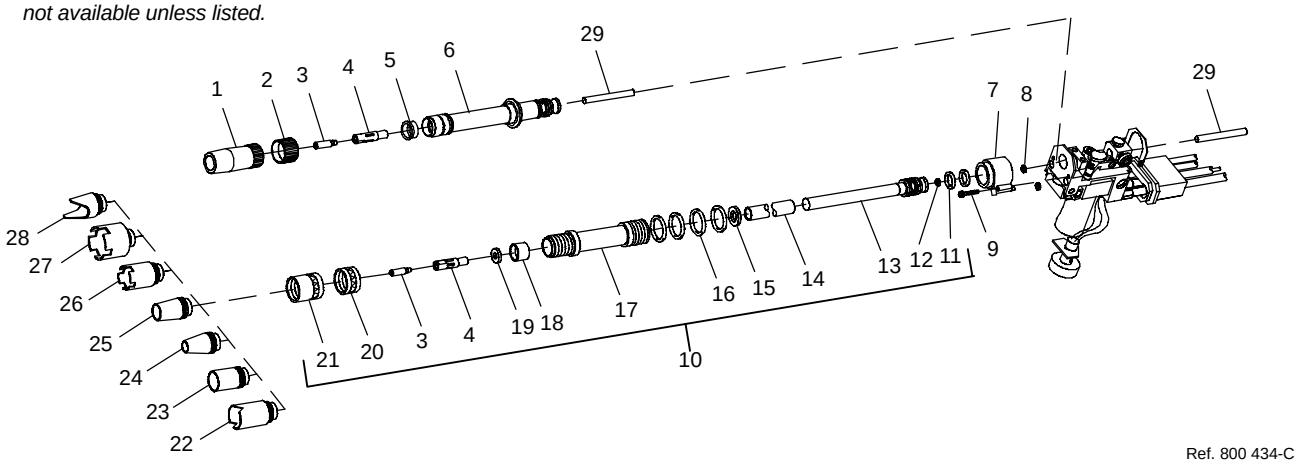


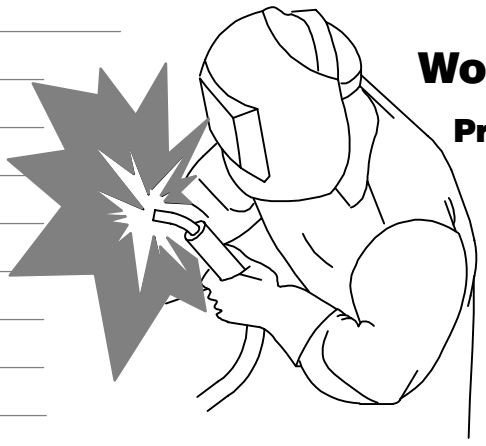

**Figure 8-5. Barrel Assembly Of Pistol-Grip Gun**

| Item No. | Part No. | Description | Quantity |
|---|---|---|---|
| | | **Figure 8-5. Barrel Assembly Of Pistol-Grip Gun (Fig 8-4 Item 38 Item)** | |
| 1 | 197 728 | Nozzle (Standard) | 1 |
| 2 | 185 102 | Nut, Nozzle Adapter Locking | 1 |
| 3 | 206 185 | Tip, Fastip .312 Od .030 Wire | 1 |
| 3 | 206 186 | Tip, Fastip .312 Od .035 And .030al Wires | 1 |
| 3 | 206 187 | Tip, Fastip .312 Od .040 And .035al Wires | 1 |
| 3 | 206 188 | Tip, Fastip .312 Od .045 And .040al Wires | 1 |
| 3 | 206 189 | Tip, Fastip .312 Od .052 And 3/64al Wires | 1 |
| 3 | 206 190 | Tip, Fastip .312 Od 1/16 Wire | 1 |
| 4 | 209 875 | Diffuser, FasTip Slotted | 1 |
| 5 | 185 097 | Insulator, Contact Tip Adapter | 1 |
| 6 | 210 511 | Head Tube | 1 |
| 7 | 203 675 | Manifold, Water (15w & 30w Models) (Includes) | 1 |
| 8 | 175 946 | O-ring, .614 Id X .070cs | 2 |
| 9 | 135 128 | Screw, Cap Stl Sch 6-32 X 1.000 (15, 30w Models) | 2 |
| 10 | 198 348 | Barrel Assembly, Water Cooled (15, 30w Models) (Includes) | 1 |
| 11 | 134 800 | O-ring, .614 Id X .070cs | 1 |
| 12 | 134 799 | O-ring, .176 Id X .070cs (15w & 30w Models) | 1 |
| 13 | 215 504 | Fitting Assembly, Barrel | 1 |
| 14 | 215 497 | Tubing, Teflon | 1 |
| 15 | 136 834 | Washer, Flat .594 Id Fbr | 1 |
| 16 | 180 966 | O-ring, .926 Id X .070cs | 4 |
| 17 | 215 498 | Barrel, Outer | 1 |
| 18 | 136 836 | Insulator, Head Tube From Adapter | 1 |
| 19 | 136 835 | Washer, Flat .390 Id Brs | 1 |
| 20 | 136 833 | Nut, 1.000-12 Stl | 1 |
| 21 | 136 832 | Adapter, Nozzle | 1 |
| 22 | ♦009 925 | Nozzle, Spot Outside Corner .937 ID X 2.375 | 1 |
| 23 | ♦050 116 | Nozzle,13/16 Orf X 1-5/8 Lg | 1 |
| 24 | ♦050 115 | Nozzle, 1/2 Orf X 1-5/8 Lg | 1 |
| 25 | 050 622 | Nozzle, 5/8 Orf X 1-5/8 Lg (Standard) | 1 |
| 26 | ♦000 442 | Nozzle, Spot | 1 |
| 27 | ♦004 466 | Nozzle, Spot | 1 |
| 28 | ♦000 443 | Nozzle, Spot Inside Corner | 1 |
| 29 | 212 156 | Liner, Phos Bronze .030−1/16 Wire X 7.313 | 1 |
| | ♦193 794 | Kit, Nozzle Adapter | |
| | | (Required For items 22 Thru 28 if using with item 6) | 1 |

♦Optional

**To maintain the factory original performance of your equipment, use only Manufacturer's Suggested Replacement Parts. Model and serial number required when ordering parts from your local distributor.**

# Notes

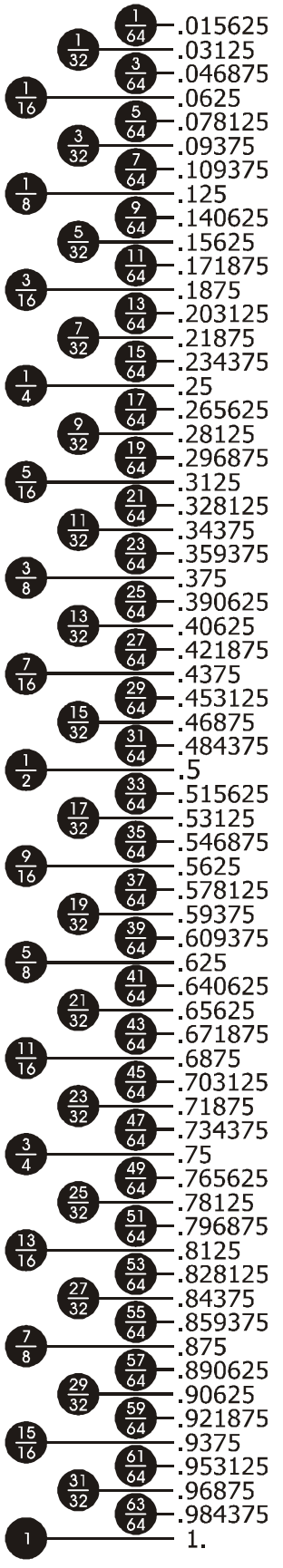


**Work like a Pro!**

**Pros weld and cut safely. Read the safety rules at the beginning of this manual.**

# Notes

## DECIMAL EQUIVALENTS



# Notes

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1. 5 Years Parts — 3 Years Labor
   * Original main power rectifiers
   * Inverters (input and output rectifiers only)
2. 3 Years — Parts and Labor
   * Transformer/Rectifier Power Sources
   * Plasma Arc Cutting Power Sources
   * Semi-Automatic and Automatic Wire Feeders
   * Inverter Power Sources (Unless Otherwise Stated)
   * Water Coolant Systems (Integrated)
   * Intellitig
   * Maxstar 150
   * Engine Driven Welding Generators **(NOTE: Engines are warranted separately by the engine manufacturer.)**
3. 1 Year — Parts and Labor Unless Specified
   * DS-2 Wire Feeder
   * Motor Driven Guns (w/exception of Spoolmate Spoolguns)
   * Process Controllers
   * Positioners and Controllers
   * Automatic Motion Devices
   * RFCS Foot Controls
   * Induction Heating Power Sources and Coolers
   * Water Coolant Systems (Non-Integrated)
   * Flowgauge and Flowmeter Regulators (No Labor)
   * HF Units
   * Grids
   * Maxstar 85, 140
   * Spot Welders
   * Load Banks
   * Arc Stud Power Sources & Arc Stud Guns
   * Racks
   * Running Gear/Trailers
   * Plasma Cutting Torches (except APT & SAF Models)
   * Field Options
     (NOTE: Field options are covered under True Blue® for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)
4. 6 Months — Batteries
5. 90 Days — Parts
   * MIG Guns/TIG Torches
   * Induction Heating Coils and Blankets
   * APT & SAF Model Plasma Cutting Torches
   * Remote Controls
   * Accessory Kits
   * Replacement Parts (No labor)
   * Spoolmate Spoolguns
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2. Items furnished by Miller, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
3. Equipment that has been modified by any party other than Miller, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.

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| Distributor | |
| Address | |
| City | |
| State | Zip |

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